

FREE FRONTIERS

The Fun is Back!

Free Frontiers is a science fiction adventure game inspired by the *Star Frontiers* RPG created by TSR in the early 1980's. It is quick to learn, easy to play. If you're eager to meet alien life forms and blast them to smithereens like the A-Team in space?

You've come to the right place!

Oobleck Sci-Fi

What You Need

Polyhedral Dice

At the very least you need one set of polyhedral dice containing a **d4, d6, d8, d10, d12, d20** and **d00**. It helps to have two d00s. The game plays best when each player has their own set of dice.

If you don't know dice, the d stands for **die** and the number is the count of sides on that die, so a d6 is your standard six-sided die. Pop a number before the d and that is the number of times you roll it. A 3d6 means either roll one six-sided die three times or roll three six-siders all at once and add up the total.

Modifiers tacked onto the end of the roll add to the total. Roll a 3d6+2 and if the dice turn up 6, 4 and 5 you get a 17.

Percentile Dice

The most important die roll in the game is the **1d100**, aka the **Percentile Roll**. To make it roll the **d00** and **d10** together. The d00 has two numbers per side and gives us the ten's digit. The d10 has one number per side and supplies the one's digit. Put them together and you get a number from ranging from 1 to 100.

So if you roll a....

d00	&	d10	=	1d100
00	&	1	=	1
10	&	0	=	10
70	&	4	=	74
90	&	9	=	99
00	&	0	=	100

That last one tends to throw people for a loop but it's true, roll nothing but zeroes and that is 100. When rolled separately a 00 on the d00 equals 100 and a 0 on the d10 is a 10.

Player Characters

Player Characters are the heart of the game. A **PC** is an amalgam of the person sitting at the table and the character sheet in their hands. With a small group, you might want to run multiple characters per player. Usually two or three characters per person. With large groups of six or more it's best to stick to one character per person. You may swap characters with other players. You may even abandon a character that isn't working for you. That character will become an **NPC** or *Non-Player Character* under the GM's control.

Galactic Master

The Galactic Master or **GM** runs the game. This player represents the imaginary universe that the adventure takes place in and gets to play the roles of its inhabitants, aka its **Creatures**. Unless something says otherwise, Characters and Creatures play by the same rules. If you don't have a GM, everyone should roll 1d100. Whoever rolls the largest number is your new Galactic Master.

All hail the new GM!

Threshold Tables

Most of the game's tables are **Threshold Tables**. Each line starts with a number in bold print. When the dice roll that number or higher without crossing the next threshold that is what you get. For example:

01: Human.

30: Thralasite.

55: Vrysk.

75: Yarzar.

With this table, if you rolled a 12 on a 1d100 you rolled up a Human. A roll of 30 to 54 changes it to Thralasite. A 55 to 74 is a Vrysk. Rolling an 75 or higher changes it to Yarzar.

Because we count from low to high, threshold tables can be arranged in ascending or descending order. To save space they may even be laid out on their side like so:

01: Human. **30**: Thralasite. **55**: Vrysk. **75**: Yarzar.

A Place to Play

The game plays best around a large table with nice seats in a room without much noise. If you can't hear what the other people are saying you cannot play the game. If snacks are to be had, be sure to bring something to share or at least be ready to throw in for pizza.

Always Round Down

The math in this game is nothing complex, but every now and then it will leave you with a decimal point. Unless something says otherwise - **round the number down** – simply discard the decimal and go with what is left. Both a 3.5 and a 3.99999 round down to 3.

Exceptions

Every rule comes with an unwritten caveat – *unless something says otherwise* – meaning that there will always be exceptions. Follow the rules but if some part of it says something specific which overrides a general rule? Go with the specific rule.

Miniatures?

While there are rules for miniatures, they are not essential. Mostly the game is conversational in tone and we let our imaginations fill in the blanks.

The Website

There is a very good chance you have already been to the website, but just in case you need to find your way back to it, perhaps to download the character sheet pdf, here is the address:

<http://www.chameleondream.com/freefrontiers>

FLUX

While the depths of space can seem cold and unforgiving, the universe is a strange and mysterious place where anything can happen, *sometimes even when you need it to*. Free Frontiers uses a metacurrency known as **Flux** to replicate such serendipity.

Each game officially begins with everyone (GM included) making a flux roll to figure out how much flux they get. What you roll depends on the number of people at the table. Anyone who shows up late can still play the game but they get no flux.

Players	Flux Roll
1	4d6
2 to 3	3d6
4 to 5	2d6
6 or more	1d6

Anything from checkers to quarters can be used as flux, but the plastic silver coins often sold as *Pirates Treasure* work best. You will also need a bowl to collect them in as flux are spent. During an adventure here is what flux does and how much it costs.

Flux It! 1 Flux. *Don't like a dice roll?* Spend a flux and re-roll it. This can be done up to three times per roll. You may not return to a better roll. It cannot be done during character creation or with the flux roll itself.

Rise Above. 1 Flux. The character becomes filled with an inexplicable surge of energy. Each flux spent adds a +10 to the score being checked.

Divine Wind. 2 Flux. A mysterious wind blows away 1d20 points of stamina drain. Additional characters may be healed by the wind at a cost of 1 flux per character. Roll separately for each character.

Premonition. 3 Flux. Retroactively, you grant a character a premonition that allows them to have seen the mess they are currently in and have done something about it beforehand.

Happy Accident. 5 Flux. The party finds something they desperately need. This should not be a major game changer, such as an important villain inexplicably trapped in an airlock.

Resurrection. 7 Flux. You bring a character back from the dead. The character will be as healthy as they had been during the last year of their life. They have no idea what just happened or how or why they are alive again.

Dream Sequence. 9 Flux. Everything that happened since the last time the characters slept was a bad dream the party just woke up from. *Do they dare try it again?*

Infinite Improbability. **12 Flux.** Improbability taken to the extreme eventually becomes inevitable, *because what could be more improbable than that?* Cook up a scheme which seems infinitely improbable and twelve flux will push it over the edge of infinity, causing it to happen.

Flux can be spent on characters or creatures. You may even pool your resources to pull off something big like *Infinite Improbability*. However, the only way to get flux is to show up to the game on time, or play until the current session ends (three hours) and a new one begins. Flux do not carry over between gaming sessions so use them before you lose them!

SAMPLE CHARACTER*

To start you are going to need a character. The quickest way to get one is to borrow a character from someone at the table. The second fastest way is to download a sample character from the website and print it out. The third way, which is still quite fast compared to *certain other games*, is to turn to the *Character Creation* section in this book and roll one up. Right now, for sake of example, you are Dent Darflex 3rd Level Thralasite Adventurer....

[
sample character sheet

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Character sheets are meant to be printed on both sides of the same sheet and folded in the middle. This separates the sheet into four pages.

Character

Combat

Equipment

Experience

Character

The character page tells us who your character is and what they are capable of. It starts with the character's name at the top. Just below it is the character's existence, a short summary of their species, gender, profession, etc.

Inclination. Inclination is the character's personality in a nutshell. It tells us how the character is inclined to act in any given situation. *It is not a guarantee.* Inclination always begins with a two-letter code:

PG = Peaceful Good

PN = Peaceful Neutral

PE = Peaceful Evil

NG = Neutral Good

TN = True Neutral

NE = Neutral Evil

VG = Violent Good

VN = Violent Neutral

VE = Violent Evil

Violent means the character is aggressive, straight-forward, and prefers a direct approach to problem-solving. Peaceful characters tend to be more diplomatic and willing to compromise. Good and Evil are fairly self-explanatory. Neutral is a middle ground between the extremes.

When a character has two inclinations separated by a slash, such as VG / PN, they are hiding something. The first code is their **Social Inclination**. This is the reputation they seek to uphold. It appears in the way they talk, the way they dress and the company they keep. The second inclination is their **True Inclination**. This is who they actually are, what comes out when their guard is down. Characters with just one Inclination are the same inside and out.

After the inclination code there will usually be three personality traits, single word terms that best describe the character's personality. Like inclination, these are non-binding and only used as a reminder of how the character is meant to be role-played.

Abilities. Streaming down the side of the sheet are the character's ten ability scores. These are the most important numbers on the page since everything you do will play off of them. They are percentages where 50% is considered universally average. Most characters will have scores ranging from 25% to 75%.

Exceptional: 65% to 75%

Average: 40% to 60%

Sub-Par: 25% to 35%

Abilities come in related pairs with the idea being that if you are good with one you will probably be good with the other. Often these are referred to using just the first three letters of the ability name. Mus = Muscle.

Muscle / Health. **Muscle** is the meat that makes your body move. It is also a stand-in for the overall sturdiness of your character's skeletal frame. **Health** is a measure of the character's constitution and natural good looks. It is often used to protect against poison and disease.

Agility / Reflex. **Agility** is the ability to move your whole body with speed and precision. When you get in a fist-fight, agility rules the day. **Reflex** is more about hand/eye coordination and the ability to react with speed and accuracy. Good ranged combat is all in the reflexes.

Intellect / Trek. **Intellect** is your character's ability to think deep, solve problems and remember intricate details with clarity. **Trek** is the breadth of what you know. It is also your innate navigational ability. Be it a city, space station or skyscraper, a good trek check will take you where you want to go.

Charm / Command. **Charm** is your ability to persuade, be cunning, crafty, able to cajole others into doing what you would like them to do. **Command** is the ability to motivate others as well as yourself into doing what needs be done. It comes from nerve, guts, courage and determination.

Sense / Luck. **Sense** is a combination of intuition and sense perception. We test it to see just how aware you are of your surroundings. **Luck** is the general grace of the universe shining upon you, *or perhaps not*. When none of the other abilities fit the situation you are in? Make a Luck check.

Features. Features are various character attributes that help you do interesting things. They come with a prefix to tell you what they are. **Ski** = Skill. **Tal** = Talent. **Tro** = Trouble.

Skills are areas of knowledge your character has specialized in. The skill's Mod or Modifier is a bonus you get when using this skill. Talents and Troubles are a bit more specific in what they do. You either have them or you don't. If there is an **x** Number under Mod that is the number of times you have the talent or trouble. *Fearless x 3* is like having the Fearless talent three times over.

Home System. This is the star system the character hails from.

Climate. Climate tells us the temperature range the character is at home in while wearing next to nothing. If two climates are given, the second one is their adjusted climate, i.e. their normal climate adjusted by the warmth of what they are wearing.

Gravity. Gravity is the amount of gravity the character's race has evolved to deal with. It is measured in Gs where Earth's gravity is 1.0g and three times that is 3.0g. A 0.0g is the weightlessness of outer space.

Muscle Mod. This is a damage bonus you get when using a muscle powered attacks. If your character sheet has been filled out correctly it should have already been factored into your attacks.

Pilot. This is the ability score you use to pilot vehicles. It is derived from your Intellect, Command and Reflex abilities.

Height & Weight. This is your standing height in centimeters and weight in kilograms. It does not include the weight of your gear.

Details. This is room for anything distinguishing about the character, such as hair color, eye color, antenna length, tattoos, etc.

Combat

The combat page contains what you need to engage in combat.

INI is short for Initiative. This is the type of die you roll to see who goes first in combat. The larger your die is the faster you engage.

Move. Movement tells us how a character moves and at what speed. Dent has *Walk 3*, which is a bit on the slow side. In combat, using miniatures, he can move three spaces across a battle grid each round. This is his *SPR* or *Steps Per Round*. On long journeys *SPR* becomes *KPH* or *Kilometers Per Hour*.

Defenses. This space is for Force Fields, Armor and Shields. They come with a die roll which subtracts from any damage headed Dent's way.

Durability. Durability is used to convert damage into wounds, stuns, knock-downs and more. All of which will be explained later in *Combat*. Durability usually ranges from 3 to 8 with an average of 5. The splotches to the right of Durability are used to record physical damage done to the character, aka

Wounds. Every wound brings a **-5** penalty to whatever you are doing. These are the numbers in the circles. Essentially, when you take a wound of damage you slash a splotch and the number to the **right** of it is your wound modifier. This is why the first wound holds a harmless -0.

Shock. Beneath durability is where you keep track of the state your character is in. When stunned by an attack you should check the spot next to Stunned. Once you recover erase it. The same goes for Knocked Down and Knocked Out.

Attacks. These are the different attacks you can make. **B** is the number of beats it takes to make the attack (the smaller the better). **Hit** is your % chance to hit. **DMG** is the amount of damage the attack does with one success. The letter attached to the die roll is its lethality: **e** = Lethal, **s** = Semi-Lethal and **n** = Non-Lethal. We don't use an **l** for lethal because it looks too much like a 1. **Aspects** are codes that tell us different things about the attack.

Energy. Free-Frontiers is a game of high-technology and nearly all characters come with a wireless personal power supply that serves up *Energy Units* or **EU** to their various devices.

The number next to Energy is the total EU the power supply carries when fully charged. Energy drain we record next to it using roman hash marks. Once the drain equals your total Energy you are out of juice and can no longer use anything that burns EUs.

Stamina. Stamina is physical energy, your characters endurance. To the right of it we record exhaustion using roman hash marks. Once your exhaustion equals your stamina you become exhausted. You take a -10 to everything you do and cannot do anything that requires stamina points.

Rests. A rest is a break you take to catch your breath and recover some stamina points. This is where we record the number of rests you have taken since you last slept. After a full night of sleep, they get erased.

Cybernetics. Characters can have robotic limbs and this is where we keep track of them. **HP** is the amount of damage the limb can take before breaking. Record damage next to it. Notes is for anything you want to add about the limb. **EC** is its Energy Consumption rate, the number of EU it consumes with every hour of activity.

Equipment

The back of the character sheet is where we keep track of all the stuff your character has on their person or in a pack. Generally speaking, we only bother with big important things. Smaller things, such as vehicle keys, you don't have to write down. Of course, if you don't have something written down you might be called on to make a **Luck Save** to make sure you actually have it.

Sometimes it pays to write things down.

In the **Wt** column is the weight of the stuff on your person in kilograms. The **Pack** column is the weight of everything carried in a pack of some sort, including the pack itself. These two are kept separate so you can quickly lighten your load by dropping the pack in an emergency.

Encumbrance. Below the equipment list is your character's encumbrance table. There are five levels of encumbrance - Moving, Packing, Lugging, Trudging and Straining - when carrying less than your Packing weight you are Moving. The other encumbrance levels will slow you down and saddle you with an action penalty. Straining is the most your character can carry and remain upright:

Packing = -10

Lugging = -20

Trudging = -30

Straining = -40

Credits. Commerce on the Frontier is handled with *Credits*, any number that starts with a \$. Because interstellar communication is slow and unreliable there are no systems of interstellar banking. Instead there exists the *Credit Coin* which looks a bit like a thick poker chip with an LCD screen embedded in it. Each credit can contain up to \$1000 as a highly encrypted form of digital currency. For more on this read the section on *Credits* in *Galaxy*.

Experience

The back right side of the sheet is primarily used for recording Experience Points aka XP.

Unspent XP. This is where you record the XP you have yet to spend. For every point of stamina you recover you get 1 XP. When you rest and recover 10 stamina? That gives you 10 XP. Providing you remember to jot it down. *Do not expect the GM to do this for you!*

1 Stamina = 1 XP.

Spent XP. Experience points are spent to increase your ability scores which in turn increases everything else about your character. When you have amassed enough XP to buy a bonus, erase that amount from your Unspent XP. Write in the ability name, the total bonus you have for it and its cost in XP using the following table.

Bonus	XP
+5	200
+10	400
+15	800
+20	1600
+25	3200
+30	6400

So for a Muscle +5 you would jot down Muscle +5, 200. Later on, if you were to increase it by another +5 this would change it to Muscle +10, 400. While the table goes up to +30 it doesn't stop there. Every +5 doubles the previous amount in XP. A +35 bonus costs 12,800 XP.

Because changing a character's ability scores can have a massive impact on the rest of the character, you should never do this while a game is in session. Wait until a time inbetween games to enhance your abilities.

Foci is the plural form of Focus. These are the types of skills the character's life is focused around. It is largely used during character creation, does not play a large part in the game, and so it sits on the backside of the sheet.

Image. You don't have to include a character image, but if you are artistically inclined there is space for it. The image is large and kept on the back of the sheet so if anyone is wondering who the character is you can pick the sheet up and flash them a picture of it.

Campaign. If the character is part of an on-going campaign, write the campaign's name on the bottom of the sheet. If the campaign has no name use your GM's name. **Date** is when the character was created.

ACTION

While many wild and amazing things can happen during a game of Free Frontiers, the actual play of the game is mostly just us sitting around a table, talking about what our characters are doing.

[dialog example]

Ability. If it all seems doable your character simply does it. Otherwise the GM will ask you for an ability check saying something along the lines of, "hold on, give me a *Hard Reflex* check." Reflex being the ability you are checking and Hard being its difficulty. Unlike other games, you should *never use your abilities to do anything!* Always do the thing first and let the GM decide if you need to roll the dice.

Skills. Skills don't tell us everything a character can do, just the things they are good at. If you have a skill which seems like it should help – mention it! – if the GM agrees you get to add its bonus to your ability score. If it seems like a bit of a stretch you get **half** that bonus rounded down. Half of +5 rounds down to +2.

So if you have *Astrogation* +30 and want to plot the course of a spaceship, that's what the skill is for, add a +30 to the check. Using *Astrogation* to tell if a dot you spotted moving across the sky is a satellite, asteroid or incoming spaceship is a half use and only worth a +15, *GM providing*.

You may only use one skill per check. If you have two or more skills that seem applicable, use the one that best fits the situation at hand.

Difficulty. Difficulty is a snap judgment made by the GM about the situation at hand. *It describes the check.* Each Hard is a -10. Every Easy is a +10. Difficulty lets us talk in numbers without having to mention any. While a check can be made infinitely hard or easy, rarely does it go beyond 30 points in either direction.

Triple Hard	= -30
Double Hard	= -20
Hard	= -10
Easy	= +10
Double Easy	= +20
Triple Easy	= +30

So a *Hard Reflex* check is your Reflex ability minus ten. While you shouldn't fight a GM's decision to make a check Hard or Easy, feel free to discuss it. Come up with an interesting way to make the check easier and the GM might just let you off easy.

Try Hard. Characters are always trying to get things done but sometimes they need to try harder. Collectively known as **Try Hard**, this lets us exchange stamina points for a bonus.

Try Hard	= 1 Stamina	= +10
Try Harder	= 2 Stamina	= +20
Try Hardest	= 3 Stamina	= +30

So tell the table you are *trying hard*, add a +10 to your score, and mark down 1 point of exhaustion under Stamina. Once you have exhausted all of your stamina points you can no longer try hard and will suffer a -10 to everything you do.

Wounds. A wounded character is not going to perform as well as an uninjured one. Every wound your character has taken reduces your chances by 5% no matter what the check is with the exception of Saving Throws.

Saving Throws. A Saving Throw or **Save** is a test of character. This is a special kind of check that isn't anything the character actually does. Because of this you can make saving throws endlessly and still have time left over for something else. You cannot **Try Hard** with a save, change the **Risk** of the roll, and **Wounds** do not effect them.

Other Modifiers. Other modifiers may come into play, but for the most part it all boils down to an ability score, one skill, a difficulty, try hard and wounds.

Ability + Skill + Difficulty + Try Hard + Wounds.

Modifiers may drag your chances down but it always stops at 1%. No matter what you are doing or how hopeless the situation seems there is always a 1% chance you will get it right.

Roll the Dice

Add everything together, tell the table your total and roll **1d100** hoping to roll **equal to or under** that number. Do so and you succeed, do not and you fail, but it doesn't stop there.

Strength & Success. What you rolled is the **Strength** of your action and measure of performance. Bigger is better and strength uses the following table to find the check's **Success**.

Strength	Success	Description
225	9	Mind-Blowing
200	8	Stellar
175	7	Incredible
150	6	Awesome
125	5	Fantastic
100	4	Excellent
75	3	Terrific
50	2	Great
25	1	Average
1	½	Half

This is a threshold table, so if you rolled a 1 to 24 you scored a half success, the bare minimum that qualifies as a success. *You succeeded but with a complication.* A 25 to 49 is a single or average success. A 50 to 74 is twice as successful as a single success, a great success. A 75 to 99 is a triple success which is

terrific, and so on. While the table tops out at 225 there is no upwards limit to strength or success. Every 25 points is another success.

Excess Bonus. *Wait a minute! If I'm rolling a 1d100 how do I roll above a 100?* Good question! Any time the score you are checking goes above 100% you get an excess bonus equal to the score minus 100. Add this to your strength.

$$\text{Excess Bonus} = \text{Score} - 100$$

So if you are checking a 125% that adds a 25 to whatever the dice roll.

Failure. Rolling over a score fails the check and most of the time that is that. *The game moves on.* At certain other times we need to know just how badly you failed. We need your *Fail Strength* which is the score you were checking minus the die roll.

$$\text{Fail Strength} = \text{Score} - \text{Roll}$$

So if you are checking a 50% and roll a 66? A $50 - 66 = -16$. That is a fail strength of negative sixteen. A normal Failure comes from a fail strength of -1 to -24. A Crash is a devastating failure with a fail strength of -25 or worse.

When everyone is called to make a Luck Save and we want to know who is the unluckiest? It is often the character with the lowest negative number. A 12 is better than a -4, and a -4 is better than a -16.

Criticals. When you roll the exact same number of the score you were checking that is a **critical success**. Roll 1d100 and if it beats your strength it replaces it.

[example]

Roll a **100** and that is a **critical fail**. It doesn't matter how big your score is. *Excess bonuses do not apply.* Roll 1d100, pop a minus sign on the front, and that is your fail strength.

Risk. Optionally, you may change the amount of risk your character is taking when making a check. Just be sure to tell the table you are doing this before the dice hit the table. Your two options are *Playing It Safe* and *Risking It All*.

Play It Safe rolls twice and uses the lower roll.

Risk It All rolls twice and uses the greater roll.

You are more likely to succeed when playing it safe but often with a lesser strength. You are more likely to fail when risking it all but when you succeed it is usually with a greater strength. Note that while rolling a 100 is not great, that number is greater than any other die roll. Risking it all makes you twice as likely to roll a critical fail.

No Guts, No Glory.

If you have two d00 dice try rolling both along with the d10. Treat this like two separate die rolls using the same ones digit. So if your d00, d00 and d10 dice roll 60, 10 and 4 respectively? That's like rolling a 64 and a 14. *Risk It All* gives you a 64. *Play It Safe* gives you a 14.

Actions. Describing what actually happens is left to the GM, but peppered around the game are action tables like this one which is used when climbing something like a tree or a cliff.

Agility + Climb

1: The more successes you make the faster you climb!

½: Make the check again.

F: You fall from halfway up.

C: You fall from all the way up.

It starts by telling us the check to make. In this case **Agility** plus the **Climb** skill if you have it. **Numbered** entries are successes. Here a single success is all you need. The more successes you land the faster you climb. A half-success is not a true success so you will need to make the check again. **Lettered** entries are failures. F is for Fail. C is for Crash. In either case you take a fall.

Notation. If you haven't noticed it already, the game is largely made of three different numbers: Scores, Modifiers and Strengths. An easy way to tell them apart is to look at their notation. Scores are followed by a % sign. Modifiers are preceded by a + or – sign. Strengths usually have no notation at all.

Challenges

Challenges compare strengths. These are usually expressed as two abilities facing off against one another such as *Agility vs Muscle* or *Intellect vs Sense*. Think **Offense vs Defense**. The side trying to make something happen is the offense and on the left. The side defending against it is on the right. When asked for something like a *Luck Challenge*? That is a *Luck vs Luck*. When asked to beat or defeat something? Beat puts you on offense. Defeat puts you on defense.

Offense vs Defense. The offense normally rolls first. That check needs to succeed for the challenge to happen. Next the defense goes. The defender does not need to succeed, but if they fail the check they enter the challenge with a negative strength. Subtract the defensive strength from the offensive strength to find the challenge strength, aka the ultimate outcome of the challenge.

Challenge = Offense – Defense.

So if the offense rolls a strength of 75 and the defense rolls a 40? That's a 75 vs 40. The difference of 35 points gives us a challenge strength of 35 and a single success for the offense.

Keep in mind that subtracting a negative number essentially adds its positive value to the other number. Had the defense failed with a strength of -15? That's a 75 vs -15 and the same thing as a 75 + 15. The offense would win the challenge with a strength of 90, a triple success!

Defeat. A defeat happens when the defense out-performs the offense, like a 75 vs 76. *Nothing happens*. Defeat should not be confused with failure. You can lower your opponent's success to zilch but this will not cause them to fail. Failure can only happen when the check is initially rolled.

Tie Breaking. It doesn't happen often, but when strengths tie, like a 75 vs 75, roll any die. An odd roll means the offense wins with a half success. An even roll means the defense defeated the offense.

Competitions. In a competition, all sides are on offense and making the same check to see who is best at whatever is being done. The character rolling up the greatest strength wins it. When strengths tie, every tied competitor should roll a 1d100. The greatest roll wins by a hair.

Team Competitions. When we have groups of characters competing (as in a Tug-O-War) that is a *Team Competition*. This time we ignore strength and focus solely on success. Everyone makes a check and the side producing the greatest number of successes wins it. Failing a check reduces the team total by 1. Crashing it reduces the team total by 2.

Combat

Combat is action constrained by time. It moves in **Rounds**, each of which is just **three seconds** long. Everyone gets to make one **Action**, one thing the character can do in three seconds or less.

Initiative. Initiative is rolled at the start of each round to see who goes first. Everyone rolls their INI die at same time. **There are no INI modifiers.** The highest roller goes first. The lowest roller goes last. Everyone else goes somewhere inbetween. When characters tie they cordially decide who goes first. When characters and creatures tie the characters always go first.

To save time the GM will often roll one die for each die type used by the creatures and that whole group uses the same result. So if some creatures use d6s while others use d8s the GM will roll a d6 and a d8 to represent each bunch who all go at once.

Leave your INI die on the table before yourself. Take it off once you are done with your action. This helps us keep track of who has gone and who has yet to go.

Surprise. During the first round of combat, when under attack and your INI die rolls a **1** you have been caught by surprise. During that round you cannot move, attack or do anything aside from take damage. Remove your die from the table since you won't be making an action this round.

Beats. Once given the chance to go, describe what you want to do. Where combat deviates from the norm is with movement and attacks. For these you get **Three Beats** to figure out how just much action you can pack into your combat action. *Think one beat per second.*

Movement. When miniatures are not in use, we largely ignore movement. It's assumed you are where you need to be. If not, the GM will ask you to *Move*, *Run* or *Sprint* to get to where you are going, this adds beats to your action. Standing still takes no beats to do.

Move = 1 beat
Run = 2 beats
Sprint = 3 beats

With miniatures, your movement is the number of squares or "steps" your mini can move. It takes two steps to move diagonally. Running doubles your movement speed. Sprinting triples it. Any form of movement can be made to run or sprint, even Swim, Fly or Dig (for more see *Miniatures in Adventure*).

Target. Movement is often used for defense. Target is a modifier that makes you harder to hit. Speed gives you a -5 for every 10 steps per round with max of -30. So if you sprint with a speed to 12 you get a

Target -5. At the end of your movement you may also do **one** of the following to make yourself harder to hit.

Crouch = 1 beat. You end your move by dropping into a crouch and that gives you a Target -10. In the next round it takes 1 beat to stand up and get moving again.

Hit The Dirt = 3 beats. You fall flat on the ground for a Target -20. You can make ranged attacks but no melee attacks. It takes 3 beats to stand up and get moving again.

Partial Cover. = 1 beat. You take cover behind something that covers most of your body for a Target -20. You may return fire around the cover without problem.

Full Cover. = 1 beat. You take cover behind something that you hope is completely covering your character. This grants a Target -40 but you cannot return fire or even peek around it.

Note that these options do not combine. You cannot drop to a crouch while hitting the dirt behind partial cover. *Pick one and ignore the rest.* It is up to you to figure out your total target and remind your opponent of it. Forget and you are a sitting duck.

Attack. Attacks have a **B** number that tells us how many beats it takes to make. An attack with b1 can make three attacks per round if you do nothing else, two attacks if you move, or just one when you run. To make the attack, adjust its Hit score by your opponent's Target modifier (if any) and roll the dice. When the check succeeds you roll for damage, once per success.

Defenses. Force fields, shields and armor work by stopping damage from reaching your character. When an attack hits, roll the dice attached to your defenses and **subtract** the total from the incoming damage.

Force fields take **1 beat and 1 round** to raise. *Protection begins in the following round.* Most fields are energy hogs, consuming 1 EU per die of protection at the end of each round. If you don't have the energy to power the force field it will collapse in the following round (see *Force Fields in Galaxy* for more).

Shields and Armor provide constant protection. We keep the two separate since a shield only protects the front and side of a character. Meanwhile armor protects everything. A shield used for defense takes no beats to use. It simply needs to be there. The arm the shield is on can do nothing but hold it up.

Damage. Divide the incoming damage by your **Durability** to find its **Impact**. If the damage is less than your durability we brush it off and the game moves onward. Otherwise...

Lethal attacks have an **e** attached to their damage dice, like 1d10e. Each impact wounds the character once.

Semi-Lethal attacks use an **s** like 1d10s. Every **second** impact wounds the character.

Non-Lethal attacks use an **n** like 1d10n. Every **fourth** impact wounds the character.

So if you have a durability of 5 and 20 points of damage make it past your defenses that amounts to 4 impacts. A lethal attack does 4 wounds, a semi-lethal attack does 2 and a non-lethal attack does just 1

wound of damage. Wounds you mark on your sheet by slashing the splotches to the right of your durability.

If your character has cybernetic limbs you can let them be wounded instead of your character. A cybernetic limb can only take so much damage before ceasing to function, yet it is far easier to replace a damaged cybernetic limb than heal a broken body part.

The maximum amount of wound damage a character can take depends on their **Health** score. Should the total wound penalty drop their Health score to zero or less they die. The durability bar stops at -45 but leaves space open on the right end of the character sheet for going beyond it.

Shock. After taking damage, impact shocks your character. It doesn't matter what type of damage it is. **One impact** stuns you, causing the character to lose their next immediate action, possibly in this round or the next. If the character is desperately clinging to someone or something they let go. Grapples are released. Any character climbing, flying, gliding, or somehow up in the air will plummet to the ground. **Two impacts** will knock you off your feet. From flat on your back it takes three beats to stand up again. **Three or more impacts** knocks you out! Now you need to make a successful **Command** check to come back to consciousness. You may attempt this once per round as your action for that round. Mark your shock state on the character sheet when this happens. Erase the mark once you recover.

Thrown By The Blow. When using minis, each impact also moves you one step back away from the blow. Get hit by eight impacts and it will throw you eight steps.

[damage taking example]

Any character that has been stunned should have their mini spun 180 so they are facing the wrong way. Spin them back around once they recover. Lay a mini on its side when it has been knocked down. Lay it on its back when knocked out. Doing this lets other players know a character's shock state without having to ask about it.

Recoil. Once everyone has gone the round recoils. Anything that happens once per round is handled at this time, such as taking fire damage or recording force field drain. When everyone is done recoiling, the current round ends and a new round begins with yet another initiative roll.

Push The Tempo! Sometimes three beats is not enough to do everything you want to do. One option is to spazz out and just do it. Every extra beat brings a -10 to anything you do during that round. Meaning four beats is a -10, five beats is a -20, six beats is a -30, and so on. Make a 6 beat action and you take a -30 to every roll of the dice. Just be sure to declare this at the start of the action, otherwise you will be stuck with a three beat action. The extra beat penalty does not apply to saving throws since saves are not tied to character action.

Extra Beat = -10 All Actions.

Another option is to spread the action out over two or more rounds. If you need 5 beats you can do 3 beats worth of action in the current round and finish it with 2 beats in the next round. No penalties here, but if someone stuns your character before the action can be completed the whole enchilada is lost.

Encounters. An encounter is not just something that happens. It is also a very flexible length of time equal to one **minute** or however long combat takes. When something is said to “last one encounter” that means it will last until the current combat encounter is over.

CHARACTER CREATION

To create a character you need a blank character sheet, a pencil, some dice, and the *Free Frontiers Substance* book. For your first character follow the instructions in this section. After that you should be able to whip them out quite quickly using just our *Character Creation Cheat Sheet* as a guide.

[needs a random determination of your home system]

1.) Foundation

Start by perusing the **Interstellar Species**. Choose a race and sex for your character. Can't decide? Roll **1d100** with the table below. An odd roll creates a male character, an even roll creates a female one – providing the race has a sexual divide.

01: Human. **30:** Thralasite. **55:** Vrysk. **75:** Yarzar.

Archetypes. Archetypes are packages of skills, talents, troubles, equipment, etc commonly possessed by certain kinds of characters. Choosing one will very quickly fill out the rest of your character. While you do need a Species, you do not need an Archetype. They are optional and really only exist to jump start character creation.

If you are interested in using an Archetype, hold off on choosing one until after you have rolled up your abilities in the next step. Certain archetypes work better with certain abilities than others.

Occupation? As far as employment is concerned, unless your GM says otherwise, brand new characters start off working for **Galactic Task Force Operations** also known as the **GTFO**. This interstellar temp agency specializes in bringing together groups of capable people (i.e. anyone with a pulse) and sending them where they are needed (i.e. war zones). Most of the time this is perfectly legal grunt work (other times not).

The GTFO covers the cost of transportation to the job site, food and any equipment deemed absolutely necessary to the task. Actual payment for the job happens on completion of the assigned task. The GTFO is notoriously stingy when it comes to their pay rates and has a terrible history of job-safety violations. Most employees who survive a mission or two will break away to form a freelance operation of their own. As long as you complete your mission the GTFO is fine with this. They know it is only a matter of time before you come crawling back to them, desperate for employment.

2.) Abilities

Roll 1d100 five times, once for each ability pair. Use the table below to turn your rolls into ability scores. Roll once more as a mulligan and use it to replace your lowest roll, providing it can.

Roll	Score
98:	75%
95:	70%
85:	65%
75:	60%
60:	55%
45:	50%
30:	45%
20:	40%
10:	35%
05:	30%
01:	25%

If you have a certain kind of character in mind you get to choose which ability pair gets which rolls. For example, a combat-centered character would do well putting its best roll into Agility/Reflexes. Meanwhile a more scientific character might put it into Intellect/Trek. If you have no idea what kind of character you want to create go straight down the line, starting with Muscle/Health and ending with Sense/Luck.

Point Shifting. To give your character even more character you may shift **5 or 10** points out of one ability and into the other it is paired with. Muscle and Health are just such a pair. If you have a 60% with both you could shift 10 points out of Health and into Muscle, giving the character Muscle 70% and Health 50%. Point shifting can be done once per ability pair and only as the character is being created.

Species Modifiers. Most species come with a bunch of ability modifiers. Check out what your species provides and add them to your character as needed.

Age. All organic lifeforms go through six stages of life which can have a profound effect on your ability scores. New characters are Adult by default which changes nothing. Use the table below to go from being an Adult to a different stage of life. Young is short for Young Adult, essentially a teenager.

Stats	Child	Young	Adult	Mature	Old	Elderly
Mus/Hea	-20/+20	-10/+10	+0/+0	-5/-5	-15/-15	-30/-30
Agi/Ref	+20/+10	+10/+5	+0/+0	-5/-5	-15/-15	-30/-30
Int/Tre	-20/-20	-10/-10	+0/+0	+0/+5	-5/+5	-10/+5
Cha/Com	-5/-10	-10/-5	+0/+0	+5/+5	+10/+10	+15/+5
Sen/Luc	+0/+0	+0/+0	+0/+0	+0/+0	+0/+0	+0/+0

Sense is a combination of intuition and sensory perception. When you are young the senses are sharp but you don't have much life experience so your intuition is weak. As you grow older your senses start to dull but your life experience grows to where there is little you cannot predict. The end effect is a sense modifier that does not change as you age.

Muscle Modifier. When an attack is muscle powered (think spear, bow, axe or punch) the damage it does receives a modifier based on your Muscle ability. Divide your Muscle score by 5 and subtract 10 from what remains. A Muscle 50% has a muscle modifier of +0, a Muscle 55% is a +1, a Muscle 60% is a +2, a Muscle 45% is a -1, etc.

$$\text{Muscle Modifier} = (\text{Muscle} / 5) - 10$$

Base Pilot. Base Pilot is used with vehicles. Add your Intellect to your Reflexes and Command scores. Divide the total by 3 and round down to the nearest 5%.

$$\text{Base Pilot} = (\text{Intellect} + \text{Reflex} + \text{Command}) / 3$$

3.) Skills

While many skills are learned and unlearned across the course of a lifetime, a character can only have as many skills active in their mind as they have **Skill Points** or **SP** to support them. A character's skill points comes from the average of their Intellect, Trek and Command abilities.

$$\text{Skill Points} = \text{Intellect} + \text{Trek} + \text{Command} / 3$$

So if you have Intellect 65%, Trek 40% and Command 70% you have 58 skill points at your disposal. You don't have to spend them all, but you cannot spend more than this limit.

Skills come with a Complexity which is the number of SP required to get the skill at +0. This doubles with every +5 skill bonus. Astrogation is a challenging skill with a complexity of 4. Astrogation +0 costs 4 SP, Astrogation +5 costs 8 SP, Astrogation +10 costs 16 SP, and so on.

The table below shows the most commonly used complexities, bonuses and their cost in skill points. While it stops at +25 there is no upwards limit. The cost in skill points just keeps doubling. Astrogation +30 costs 256 SP.

Complexity	Cake	Simple	Average	Challenging	Tough
+0	1	2	3	4	5
+5	2	4	6	8	10
+10	4	8	12	16	20
+15	8	16	24	32	40
+20	16	32	48	64	80
+25	32	64	96	128	160

Write your skills and their bonuses in the Attributes section of your character sheet with an **ski** prefix to remind us it is a skill. You do not need to include the skill point cost as skills rarely change during the course of a game.

Focus. A focus is a group of related skills. It is also an area of knowledge that a character has focused their life around. *Foci is the plural form of focus.* The number of Foci a character gets depends on their Intellect. Essentially they get none to start and 1 focus for every 25 points of intellect.

Intellect	Foci
100	4
75	3
50	2
25	1
0	0

What a focus does is reduce the complexity of a type of skill by 1 to a minimum of 1. Computers and Demolitions are both Technical skills with a complexity of 3. Choose Technical as a focus and it reduces Computers and Demolitions complexity to 2.

You may take the same focus multiple times. Each instance reduces skill complexity by 1. A character with Intellect 60% gets two foci and can put both into Technical (ex: *Technical x 2*) reducing the complexity of all technical skills by 2 points. Computers and Demolitions now have a complexity of 1. Foci are recorded on the back of the character sheet. Not because they are unimportant but because they rarely come up during game play.

Languages. While a +0 skill bonus may not seem very helpful, there are a number of skills where you need that +0 to do what the skill entails. Languages are such skills. Without a +0 at the very least you cannot speak the language.

Every character should possess at least one language skill. A character without a language skill can grunt, squeak, bark or make other animal noises but they cannot speak. **Esper** is a good choice since it is the most common language spoken throughout the galaxy.

Learning & Unlearning. Character skills change over broad stretches of time. When it matters, it takes **1 month** of time to learn 1 SP of a new skill. So it takes a character at least four months to learn Astrogation +0. Other skills can be diminished or forgotten during this time to free up skill points and make way for the new skill.

4.) Taltros

Taltros is short for *Talents & Troubles*. These are special features a character often gets from their choice of species. You may get more but for every talent you take need a trouble to balance it. So if you want the *Fearless* talent you might take the *Easily Spotted* trouble to offset it. Beyond what one gets from their species or genetic engineering, characters are limited to six talents and six troubles total. On your character sheet write these down as features with a **tal-** or **tro-** prefix to remind us of what they are.

Iterations. Taltros do not carry a bonus like a skill. Instead they have a multiplier known as their Iteration. Think of this as the number of times you have that particular taltro. On your sheet, instead of writing down the trouble *Vengeful Friend* three times you would write down *Vengeful Friend x 3*.

This is a good way of compensating for that talent / trouble balancing act. It is much easier to have a triple trouble that will loom large in the character's life than three different troubles to keep track of.

Max. Taltros with a **Max** in their description are limited in their iterations. A talent with Max 3 you can have up to three times. At Max 1 you can only acquire it once. With no Max the sky is the limit.

Biological. Biological taltros are genetic in nature and can only be acquired through ones species or genetic engineering. See *Genetic Engineering* in *Galaxy* for more on this. Non-biological taltros are **Normal** taltros and can be acquired by anyone.

Changing Taltros. You may drop taltros and replace them with others, just as long as the balance between talents and troubles is maintained. Time-wise, this does not happen overnight. Usually it takes a **year** to gain a new talent or lose an old trouble. Taltros brought on by your species cannot be dropped only enhanced with further iterations.

Opposites. Many talents are the opposite of a trouble, such as *Attractive* and *Ugly*. Your character cannot have both. You cannot be *Attractive* and *Ugly* at the same time or *Frail* and *Tough*. They cancel each other out. Choose one of the other.

5.) INI

To find your initiative die, add together your Sense, Reflex and Command scores and divide by 3. Add to this **double** your Initiative skill bonus, providing you have it.

$$\text{INI} = (\text{Sense} + \text{Reflex} + \text{Command}) / 3 + \text{Initiative} \times 2.$$

Use the table below to find the die. Anything greater than 120 uses a d20. Write this into the **INI** space on your sheet.

120: d20
100: d12
80: d10
60: d8
40: d6
00: d4

[example]

6.) Movement

For movement you first find your *Base Speed*. Add your Muscle to your Agility and divide by 20, rounding down to a minimum of one.

$$\text{Base Speed} = (\text{Muscle} + \text{Agility}) / 20.$$

Your species should come with a number of locomotions such as *Walk x1.5*. Multiply your base speed by the number attached to the movement and that is your speed with it.

So if your character has Muscle 60% and Agility 40% that creates a base speed $(60 + 40 = 100 / 20 = 5)$ of 5. A Walk x1.5 turns it into $(5 \times 1.5 = 7.5)$ Walk 7.

$$[\text{spr} = ((((\text{kph} \times 1000) / 60) / 60) \times 4)]$$

7.) Equipment

Equipment we record on the back of the sheet. This is not a list of everything your character owns or even has on them, just the big important things. If you received a bunch of equipment through an archetype? That is the stuff you have accumulated on the way to becoming who you are. You may trade it in for similar items of an equal or lesser value. All will be in used condition and only worth half the going market value should you try to hawk it.

Starting Cash. To find the amount of money your character starts with, multiply your Luck times your Charm, and multiply the total by any skill bonus you have in the Finances skill.

Starting Credits = (Luck x Charm) x Finances Bonus.

So a character with Luck 40% and Charm 60% would start the game with (40 x 60) \$2,400 credits. If you had Finances +20 this would multiply it to (2,400 x 20) \$48,000. Keep in mind that this is the character's entire life savings up to this point. They get this nest egg once and that is it.

Variable Pricing. Out on the frontier, nobody knows what anything is worth but everyone has a general idea. If the price of an item is a bunch of dollar signs instead of a number? That is variable pricing. To find the current asking price roll 1d10 for the first dollar sign and add a zero for every additional dollar sign. When the GM is not around to witness the die roll use a 5 in place of the 1d10.

\$	= 1d10
\$\$	= 1d10 x 10
\$\$\$	= 1d10 x 100
\$\$\$\$	= 1d10 x 1000
\$\$\$\$\$	= 1d10 x 10000

For a computer costing \$\$\$\$\$ you would roll 1d10 and add four zeroes to it. A roll of 8 is \$80,000 credits. If the GM is not on hand to witness the die roll it costs \$50,000 credits.

[maybe we should get rid of this. It will be a pain trying to program it into a database where the field is always expecting a number. Although we could use a varchar field]

Contraband. Items with **Con** numbers have a questionable legality. Depending on where the character is the item might not draw any attention or it might get them locked up for simply possessing it. New characters may not purchase any item with a Con number greater than 3.

Weight. Weight is measured in kilograms. If something doesn't have a weight that doesn't mean it weighs nothing, just not enough to matter. Attempt to carry a few hundred of them and GM will make it matter.

The weight of items you keep on your person, such as a sidearm or skein suit, go in the **Wt** column of the equipment table. If the item is in a pack of some sort (including the pack itself) put it in the **Pk** column. Total up the two columns, add them together and that is the weight you are carrying.

Base Load. How much you can carry before becoming encumbered is known as your Base Load. It is half your Muscle score in kilos.

Base Load = 1/2 Muscle Score in Kilograms.

Use your base load to find the thresholds of your encumbrance table.

Packing = Base Load x 1

Lugging = Base Load x 2

Trudging = Base Load x 3

Straining = Base Load x 4

So with Muscle 50% your base load is 25 kilos. On your character sheet write down Packing 25, Lugging 50, Trudging 50, Straining 75. To stay unencumbered keep your total equipment weight under your Packing weight.

Body Fat. All organic creatures store energy as fat inside their body. How much fat a character carries we leave up to you, but it is highly recommended that you write a Body Fat entry in your equipment list and give it a number of kilos. This does count against encumbrance.

Basically, to keep from starving your body can consume its fat, getting a day's worth of food from each **half kilogram** of it. Most healthy characters carry around **five kilos** of fat which will let them go ten days before starving (see *Food & Water in Adventure*).

Body Weight. Your body weight is the weight of your body sans fat. It comes from your Species and your Muscle score. [how?]

8.) Defenses

Defenses are typically Force Fields, Shields and Armor.

Force Fields. Force fields should be written with their name followed by the protection they bring, ex: *Albedo 3d10*. See *Force Fields* in *Galaxy* for more on how they work.

Armor. Armor comes from any piece of equipment bearing an **A#** or **Armor Number** which is not a shield. Total up what you are wearing and use the Dice Table to turn it into a die roll. Put this on the front of your sheet.

Shields. Shields do the same but we keep them separate from armor since they only protect the front and sides of your character. The arm holding a shield can only wield that shield.

9.) Attacks

Most of your attacks will be weapons. Look at what you have for equipment and write one entry per kind of weapon, numbering them when carrying more than one. So instead of writing in two separate Laser Pistol attacks for a character carrying a pair of laser pistols you would write in one entry called *Laser Pistols, 2*.

B. This is the number of beats it takes to use an attack. Beat counts are determined by the weapon or attack and never change.

Hit. An attack's hit score is made of one ability score and one skill bonus. The ability depends on the type of attack. **Agility** is used with melee and unarmed attacks. **Reflex** is used with ranged attacks. **Sense** is used with explosives since timing is everything.

Melee = Agility

Ranged = Reflexes

Explosives = Sense

As for the skill, use whatever makes the most sense. The combat skills *Melee* and *Ranged* cover everything in their domain. More specialized skills such as *Rifles* and *Archery* do exist. These have a lower complexity, making them easier to perfect but with limited usage. *Archery* only covers the use of bows and bow-like weapons.

Add in any other modifiers that permanently apply to the attack. Hit should give you a score you don't have to think about to use. In most cases, to fire your laser pistol you roll its Hit score and that's it.

DMG. This is the damage an attack does. Use the Dice Table to turn a weapon's damage number into a die roll. If the attack is muscle powered (punches, swords, bows, etc) add your muscle modifier to the attack's damage number before turning it into a die roll.

Damages that have an **h** attached to them do **heavy damage**. Every point of it is equal to 10 points of normal damage. So an attack doing 1d10h actually does 1d10 x 10. Heavy damage is most commonly used with weapons designed to demolish vehicles and buildings.

Aspects. Aspects can be copied directly from the weapon description.

Ammo. If an attack uses ammo (other than Energy) write that amount on a line under it in the attack table and use that space to keep track of what you have.

10.) Energy

For your wireless power supply, add together the EU provided by anything in your equipment list. Put the total next to where it says Energy on the front of your sheet.

Power supplies are passcode protected and it is assumed that your character has put this passcode into everything that needs access to the power supply. Items that use EU can usually carry many different passcodes allowing them to hook into many different power systems simultaneously.

The range of a personal power supply is quite short, two to three meters at best. The items that use it often do not come with energy supplies of their own. This is done so if someone steals your laser pistol all you need to do is back away from them to cut off its power supply.

11.) Durability

Durability comes from your Muscle, Health and Command scores added up and divided by 30. On your sheet put this to the right of where it says Durability. It is the amount of damage needed to wound your character.

Durability = (Muscle + Health + Command) / 30.

Stamina. Stamina is a measure of endurance. It uses the same abilities as durability but divides the total by five. Write it next to Stamina on the sheet.

Stamina = (Muscle + Health + Command) / 5.

Cybernetics. New characters do not get cybernetics, but should the character ever acquire any write each piece on a separate line in the cybernetics section of the character sheet. Place the item's DP count under DP. Damage is recorded next to it using hash marks. While cybernetic limbs do weigh something, they carry their own weight and do not add to the character's encumbrance. EC is the amount of energy it consumes on an hourly basis. If your power supply ever runs out of energy the limb will shut down and refuse to move.

12.) Climate

Organic beings often acclimate to a certain range of temperature. Pick a climate from the table below, providing the character's species agrees with it. The Yarzar love warm environments and have a limited climatic range of Warm to Torrid. Choosing the Cold climate is out of the question.

Climates are thresholds whose numbers are in degrees **Celsius**. Anything below a -20° is too cold for most life forms. Torrid is as hot as it gets and stops at 50°.

Climate	Temperature
Torrid	= 40°
Tropical	= 30°
Warm	= 20°
Temperate	= 10°
Cold	= 0°
Frigid	= -10°
Arctic	= -20°

Warmth. Equipment with a **W#** or *Warmth Number* helps you deal with cold climates. Think of each warmth point as 1 degree Celsius shifting your natural climate zone closer to Arctic. Put on 10 warmth points of clothing and a character native to the Temperate climate can comfortably exist in a Cold one.

Negative warmth numbers or *Cooling Numbers* are rare but they do exist. These subtract from your total warmth to help deal with hot environments. Every -10 warmth points moves your native climate one step closer to Torrid.

Climates are often written down as a pair separated by a slash like *Warm / Cold*. The first is the character's natural climate. The second is the equipment adjusted climate.

13.) Personality

Hopefully by now you have a nebulous idea of who your character is. Choose an inclination from the following list. Inclination tells us how the character tends to react to any given situation. *It is not a guarantee.*

PG = Peaceful Good
PN = Peaceful Neutral
PE = Peaceful Evil
NG = Neutral Good
TN = True Neutral
NE = Neutral Evil
VG = Violent Good
VN = Violent Neutral
VE = Violent Evil

If the character is not who they appear to be, give them a second inclination to reflect their inner nature. Write the two down separated by a slash, ex: VN / PG for someone who appears violent neutral but is actually peaceful good. Characters with just one inclination are the same inside and out.

Personality Traits. Next choose three descriptive traits from the Traits selection in the Substance book. Why three? Because the more traits you tag a character with the less meaning they carry. Like inclination, personality traits are suggestions, not guarantees.

Image. For the artistically inclined, there is space on the back of the character sheet for a portrait. Why the back? So you can flip it up to show other players what the character looks like. You don't have to do this, but it doesn't hurt.

Existence. Your character's existence goes beneath the character's name. It can be anything. Most characters use their species and archetype.

Name. Last but not least, your character needs a name! If you can't think of anything just leave it blank until something comes to mind.

GALAXY

Where is the Frontier? *The Frontier is everywhere.* Most people don't even realize they are in it. Most just live day to day on whatever giant rock they were born on and have no clue that there is anything beyond its atmosphere. The Galaxy section is for those who have found a way off of that rock and now need a clue. Consider it a primer explaining what you need to know to survive and thrive in the free frontier.

These topics are listed alphabetically for easy reference. Because of this there may be ideas expressed in each which you'll have to read about elsewhere to fully understand. Our best advice is to read them all and eventually you will get the jist of it.

Anti-Gravity

Gravity is caused by the mass of an object distorting the fabric of space-time around it. The greater the density, the greater the pull, and the greater the force of gravity. Through the use of force fields science has been able to distort the fabric of space-time in the opposite direction creating essentially a bubble in the lattice of gravitons. This causes a lessening of the pull and sometimes even a push known as *Anti-Gravity*.

Gamewise, what an anti-gravity field does is change the level of gravity inside itself. Earth has a pull of 1.0g. An anti-gravity field producing 0.5g could increase it to 1.5g or reduce it to 0.5g.

Selinsalguodium. Anti-gravity was discovered through the properties of a rare earth metal known as *Selinsalguodium* (pronounced *Sell-in-sal-Gode-ium*). Give it a positive electrical charge and the metal increases the gravity around itself. A negative charge reduces it. The greater the charge the greater the gravitational shift but only in a localized area and often with a maximum of 3.0g.

While this may not sound exciting, organic beings evolved to deal with the gravitational pull of the planet that produced them. When forced to live under a different level of gravity prolonged exposure can cause sickness, even death. Ships with selinsalguodium in their decks can adjust the ambient gravity of different areas to comfort the crew and let them stay in space far longer than usual.

Granted, selinsalguodium is not cheap and many spaceships often go without it, preferring instead to let their crew take long breaks on planetary surfaces to recover between trips. A tell-tale sign of a pirate attack is that a ship's decking has been torn up and hauled off. Selinsalguodium may not be as valuable as gold but there is a reason why miners make dangerous journeys to distant nebulae in order to extract it.

Grav Lifters. A bit like a hot air balloon, when you expand the gravitrons inside an anti-gravity field the denser gravitrons outside the field push against it. When this gravity comes from a large source of mass, such as a planet, it will actually squeeze the field upwards and away from its source. This discovery proved a boon to space travel with the invention of **Grav Lifters** which are essentially pods you attach to a space vehicle to help it escape a planet's gravity on lift off.

While in theory you could let a vehicle's grav lifters do all of the heavy lifting and simply float a vehicle out into space, grav lifters are expensive and the lift is slow, almost as slow as a hot air balloon (depending on the intensity of the gravity you are trying to escape). Most ships use a combination of grav lifters and engine power, providing they are even designed to land on a planet. Large spaceships often enter orbit around a planet and use smaller vehicles like shuttle pods and space bikes to ferry things back and forth from the planet's surface.

Grav Vehicles. Grav vehicles should actually be called Anti-Grav vehicles but some marketing team somewhere found that dropping the *Anti-* made for better for sales and so they are now called *Grav Vehicles*. These very much resemble similar terrestrial vehicles but lack anything like wheels or wings to keep them aloft. Instead a selinsalguodium filled frame creates an anti-gravity field around the vehicle which controls its altitude. Plasmajets or wind turbines are used to push it along.

Grav vehicles come with two travel modes. In skim mode the computer controls the altitude, always keeping the vehicle one to three meters above the ground. From this we get the nickname *Skimmers*. In fly mode, altitude control is handed over to the pilot and the vehicle can fly. Grav vehicles can even go into outerspace although the computer will stop you from doing so if the vehicle was not designed for space travel. Outerspace is no place you want to go without life support.

Grav vehicles do not burn much energy to remain aloft but they do require some. Should a vehicle's power supply ever run dry it will lose its anti-gravity field. The vehicle should force you to land before this happens, but if for some reason you suddenly lose power it will drop like a rock.

Some grav vehicles, called *Air Vehicles*, come with wings to stabilize them, allowing for faster and safer travel through the air. These cannot skim. They can only fly. They may hover above the ground and move at slow speeds over it, but going too quickly runs the risk of a sudden downdraft causing the vehicle to crash.

Grav vehicles are fast but they are not nimble. By lacking contact with the ground they tend to slide around and can easily bump into things. While they make great off-road vehicles, the use of skimmers is often banned on roads, especially in traffic prone areas. Most people in civilized areas still use good old-fashioned wheeled vehicles to get around.

Credits

The **Credit** and the **Credit Coin** are small technological marvels which single-handedly support the entire galactic economy. The credit is a highly-encrypted digital currency that can only exist and be transferred between credit coins. A \$1 is one credit.

Credit Coins. A credit coin looks like a checker except it is made of white plastic with an LCD screen on one side and a solar cell on the other. They are incredibly durable and waterproof up to 500 meters. The LCD side or *Money Side* tells us how many credits are on the coin. Each holds up to \$1000, aka one *kilocredit* or **KC**. The solar side or *Sun Side* charges the battery inside the coin. When the money side goes blank, leave the sun side sitting in some light and it will come back on after a few seconds.

Anyone asking "Sun or Money?" is asking for a coin flip. A similar question is "Pits or Points?" which refers to the three small gold-tinted pits studding the rim on the sun side and the silver-tinted points that line up with them on the money side.

Making Transactions. To make a transaction between two coins, stack them pits to points, with the receiving coin on the bottom. The coins will validate each other. The rim of the top coin glows green when they are good. Spin a finger around the LCD to dial in an amount ranging from \$1 to the most that is on the coin. If the green light turns orange you've dialed in more than the coin below it can hold. Finally, tap and hold the LCD screen until the green light flashes and goes out. At that point the amount you dialed in falls into the other coin and the transaction is complete.

When you stack the coins and don't get a green light either there is not enough power in the coins, the pits and points are not aligned correctly, or the coins themselves are too distant from each other to work. They literally need to be right on top of each other with nothing in-between. Also, check the rims of the coins themselves, if any of the coins in the stack are damaged, defective or have been tampered with they will glow red on failing validation.

It's All About the Blue Chips. To consolidate your credits, simply stack a bunch of credit coins and double tap the top coin. All of the currency on all the coins in the stack will flow down like water, filling up the lowest coins to max them out at \$1000 a piece and turning their sides blue. To give someone \$17,000 in credits you simply stack up as many credit coins as you have, double tap the stack, and give them seventeen blue chips off the bottom.

Coin Banks. Because there is no quick reliable communication between the stars there is no interstellar banking. However, because large amounts of credits can add up to stacks upon stacks of credit coins, more localized coin banks are not uncommon. These will hold your coins for you and give you a credit card that most businesses on that planet will honor. Some may even pay interest and allow you to make withdrawals from other locations. None of them extend services beyond the planet they are on.

Not all banks can be trusted. Look for one with a long history of operation. The ability to travel faster than light has given rise to many false front banks that literally fly by night. If you do a lot of planet hopping it is best to have a safe hidden somewhere on your ship and keep your credits there.

Galactic Digital Consortium. What is great about this system is that no one has succeeded in cracking it, *as far as we know*. The coins are fairly easy to manufacture and are often given away for free, but the digital currency they hold has proven impossible to replicate. Credits are created and maintained by the **Galactic Digital Consortium** or **GDC** which releases a certain amount of them each year to help keep the frontier economy relatively stable. How they know what they know and make the decisions that they do are closely guarded secrets.

Communication

One of the great frontier inventions is the universal translator or **Polyvox**. This device is normally worn as a band around one's neck or somewhere near the head. What it does is intercept the sounds that it picks up, translates what it can, and replaces the utterance with an approximation of what the device thinks

has been said in a language that its wearer can understand. This is channeled directly into the auditory nerves of that being, causing the translation to be heard as sound.

As wondrous as they are, universal translators do come with a number of limitations. The biggest of which is that it allows you to hear an alien language but not speak it. Whoever you are speaking to needs to have their own translator of some sort to hear what you have to say.

Translators also tend to mangle anything which is not carefully and distinctly said. Nuance is often lost on them. *Singing sounds god-awful*. For this reason people still take the time to learn different languages, preferring to speak on their own behalf rather than relying on a machine to interpret it.

Long-Distance Communication. Technologically advanced societies often use small computerized communication devices that connect to one another at the speed of light. On most planets you can use one to chat with anyone on that world in real time, using audio or video as desired. On more primitive worlds you can still do this with such devices providing you have a spaceship or satellite in orbit to relay the signal. Otherwise communication is limited to **5d6 kilometers**, give or take a d6 depending on the curvature and clutter of the planet's surface.

The devices themselves come in many different shapes in sizes but all tend to be small and hand-held. Tablets are popular but the current favorite among spacers is the **Wristcom** which is worn like a watch. Although the screen is small, wristcoms contain holographic projectors that can expand the screen to a decent size floating above the wearer's wrist. All robots come stock with a similar communication device.

Interplanetary Communication. Communication between planets is a bit more complicated. Inside a solar system, distances are measured in **Terameters**, or simply **Teras**, where each is equal to a million kilometers. Using our own solar system as an example:

Sun to Mercury	= 58 tm
Mercury to Venus	= 50 tm
Venus to Earth	= 41 tm
Earth to Mars	= 78 tm
Mars to Jupiter	= 550 tm
Jupiter to Saturn	= 646 tm
Saturn to Uranus	= 1,448 tm
Uranus to Neptune	= 1,627 tm

It takes a beam of light roughly 3 seconds to travel 1 tera. To find the minimum time it takes to send a message between two planets, multiply the distance in teras by 3 and divide the result by 60 to turn it into minutes.

Sending a message from Earth to Mars takes 234 seconds or approximately 4 minutes. Sending it from Earth to Neptune takes 3.6 hours which is not bad but can cause problems when the message is urgent. Interplanetary Communication does require specialized equipment. A simple wristcom or tablet won't hack it.

Transmission Time = (Distance in Teras x 3) / 60.

Interstellar Communication. One of the great ironies of faster than light travel is that once you have it the speed of light starts to seem somewhat slow. Such things as "subspace communication" still reside in the realm of fantasy. If you want to send a message between the stars, your best bet is to put it on a drone ship also known as a **Bottle Rocket** and have it relay the message once it reaches its destination. *Providing it does.* You will have no way of knowing if the message was successfully sent until the bottle rocket returns to report on its mission.

Traveling through the void is fast. It takes 13 seconds to travel one light year. Unfortunately, it takes a few hours to get a drone ship out into space, then it takes at least an hour to make the navigation calculations necessary to take it to its destination, tack on a few more hours traveling by engine power to finish the trip, and finally do it all over again for the return trip home. It takes at least a day's time to send an urgent message and closer to a week for anything else. Keep in mind that there is always a chance that your bottle rocket will simply disappear. This can leave you waiting even longer before deciding to send another one. Sometimes the best way to send a message between the stars is to simply hop in a spaceship and deliver it yourself.

Governing Bodies. A major ramification of all this is that the reach of governmental bodies is limited by their ability to communicate, meaning most do not range beyond the solar system they reside in. Interplanetary banking does exist. *Interstellar banking does not.* Corporations may have an interstellar presence, but they are made of solar system-specific branches that operate independently of each other. Most planets have a single governing body presiding over them. Most solar systems are ruled by a republic of these planetary bodies.

Empires. While Interplanetary Empires are not unheard of, the idea of an Interstellar Empire is a pipe-dream at best. Those who try to establish them seem doomed to fail largely because of these communication difficulties. Those who succeed have often done so through campaigns of fear and terror designed to keep planetary powers in check while the empire's rulers are out exploiting other worlds. Other so-called *successful empires* are not really empires at all but militant scourges that move from planet to planet, stealing their resources and burning the place to a cinder before moving on.

Alliances. At best there are interstellar alliances, different planets promising to come to each other's aid in a time of crisis. Usually to counter the threat of someone attempting to establish an interstellar empire. Sometimes they succeed. Other times they do not.

Contraband

Contraband comes from just how dangerous and possibly illegal Star Law considers an item to be. This is represented by its *Con Number*. If an item doesn't have one it is **Con 0** and considered perfectly legal and safe to possess. Otherwise the number will range from 1 to 10:

1 to 3 = Semi-Legal.

4 to 6 = Illegal.

7 to 9 = Highly Illegal.

10 = Incredibly Illegal.

Busted! Of course, legality is relative. Most governments make their stance known by posting the maximum allowed level of contraband at their ports of entry along with any exceptions to it. The idea being that you should not attempt to bring in anything with a con number higher than the posted limit. Otherwise:

1 Point Over = item will be confiscated and returned when you leave.

2 Points Over = item will be confiscated and not returned.

3 Or More Over = item will be confiscated and you will be detained pending further investigation.

Repeat offenders will eventually be banned from entry, or possibly even classified as smugglers and sent away to prison for a very long time.

Outside civilized areas, anything goes. *Almost!* With a contraband of 7 or more, and especially anything with a 10 (think weapons of mass destruction), there is a good chance that an intelligence agency will catch wind of it and try to confiscate the item. They don't mess around and will terminate anyone who stands in their way.

[+buying contraband items]

Energy

Electricity rules the day on the free frontier. While fossil fuels may still be burned on some backwoods podunk of a planet, most energy is generated by solar, wind or geothermal power. Fusion generators do exist but large ones are expensive to create and maintain. Older fission generators can still be found in some places, but they have been falling out of favor due to messes created by radioactive waste and the occasional meltdown.

Wireless Energy. Powerlines are still used to carry electricity over long distances, but for short distances electricity is transferred wirelessly, often through what is known as a *Wireless Personal Power Supply* made from batteries and a wireless emitter carried on a character's person.

Basically, the character sets up a passcode which is given to any tool or device that needs power. When a character wants to patch into a larger power supply, they tap its passcode into the wireless emitter of their power supply. This causes energy to flow into the supply and out to its devices without draining any batteries. As a general rule, batteries are only drained when no greater power source is available.

Gamewise, we assume you have passcoded all of your equipment into your personal power supply. It's only the other power supplies you are connected to that you have to keep track of. It takes **1 minute** to tap a passcode into your wireless emitter. There is no limit to the number of passcodes an emitter may carry.

Recharging Power Supplies. Energy is measured in **EUs** or **Energy Units**. To recharge the batteries of a wireless power supply you connect to another power supply and draw energy out of it. Most connections provide **1 EU per minute**. Inside a building or vehicle your personal power supply should take to recharging itself automatically.

High Voltage Recharging. For safety reasons, high voltage recharging is done using cables and never wirelessly. It transmits **1 EU every 2 rounds** (aka 10 EU per minute) but only to batteries of type C or larger. Attempting to recharge type A or B batteries with a high voltage connection will cause them to explode so the ability to connect isn't even there.

Buildings. Installations often supply wireless energy to their occupants, *providing they have the building's passcode*. Such buildings are often connected to a power grid that has more energy flowing through it than anyone needs to worry about. Of course, when the grid goes down the power goes out instantly, unless the building has been outfitted with backup batteries. When running on backup power only the most essential connections will be given power. This often means stripping wireless power from its occupants, especially visitors.

Vehicles. Unless something says otherwise, all vehicles are electric and come with banks of batteries that supply both the vehicle and its occupants with wireless power. Since vehicles need energy to move, its wireless emitters can be toggled on and off with a flick of the switch by whoever is at the helm.

Cybernetics

Cybernetics is the grafting of robotic parts onto organic beings, creating what is essentially a cyborg. This is usually done only with Armatures, Sensor Arrays and Transport systems. In theory, an entire organic body can be replaced by machinery until only a brain remains. Psychologically, this does not sit well with most people. Anyone undergoing such a transformation needs a serious reason to endure it. Also there is no way of going back. Even if you do come upon an organic limb to replace a cybernetic one it is far easier to alter a robotic limb to interface with an organic nervous system than it is to reconnect two similar yet different organic structures. In most cases, once you go cybernetic there is no going back.

Computers. Another consideration to keep in mind, is that even for something as simple as a robotic hand the character is going to need a computer permanently attached to them, one containing a Daemon that will always be there, watching everything they do. It cannot extend itself through the character's nerve endings to enter the character's mind and read its thoughts, but any sense of privacy will soon disappear.

Daemonic Possession. Only one computer is needed per cyborg and it will control all of the character's robotic parts. While a computer's daemon will generally do anything you ask of it, should the computer be hacked or taken over by another daemon – *now you have a problem* – it can turn against you, easily taking control of limbs you thought you had complete control over. Often there is no way to retake control without shutting down the power leading to your robotic parts and using a robocomkit to go in there and remove the offending program.

Energy Consumption. Cybernetic parts come with an **EC** or *Energy Consumption* rate, the number of EUs the parts consume every hour. Because of this you will want to buy enough batteries to keep them moving, at least for a day if not a week.

You may intentionally shut down or put to sleep robotic parts to conserve energy. At that point they will be no more effective than a peg-leg. It takes **1d10 rounds** to turn a cybernetic limb on after being powered down.

Cybernetic Surgery. While cybernetics are not uncommon, grafting robotic parts onto your body is nothing to be taken lightly. It requires a surgery center dedicated to the task as well as a surgeon or medical robot willing to perform it. The greater the alteration being made the more difficult the procedure becomes. The cost of the surgery is typically **10 times** the cost of the robotic parts involved.

Intellect + Cybernetics

3: Recover in 1d10 hours.

2: Recover in 1d10 days.

1: Recover in 1d10 weeks with Health -5.

1/2: Recover in 1d10 weeks with Health -10.

F: The surgery was not successful.

C: Oops! You're dead. Time to notify next of kin.

The more successful the surgery the quicker the character recovers from it. Recovery time needs to be spent doing nothing but recuperating. Anything more stressful than restful activity should be followed by another roll for the recovery time, adding onto the time the character has already spent.

A Single or Half Success will graft the robotics onto the character's body but also cause the character to permanently lose either five or ten points of Health. Failure means the surgery was not successful. It can be attempted again but the procedure will suffer a -10 for every time it has failed in the past.

Simple Cybernetics. Most cybernetic surgeries are done to replace missing body parts. Here are some "simple" cybernetic options that do just that. **EC** is its hourly energy consumption. **MCL** is the minimum level of computer the part needs to run it. **DP** is the amount of damage the part can take before breaking. Think of it as the limb's wound count. Keep in mind that a cybernetic arm or leg comes with its own foot or hand. You don't need to buy them separately.

[character sheet should list wounds for cybernetics instead of HP since they do not use HP. Maybe we should use DP for items that take damage but are not heavy points]

Type	Price	EC	MCL	DP
Hand or Foot	200	1	2	2
Arm	400	2	2	4
Leg	800	3	2	6

Bionics. Bionics make cybernetic arms and legs operate even better than the organic limb it has replaced. They do nothing for cybernetic hands and feet. Simply tack the upgrade name onto the limb and multiply its price. The **Muscle** and **Reflex** bonuses enhance all of the character's ability scores but only if you have a pair of limbs. Having just one limb gives you no bonus for Bionic, a +5 for Trionic and a +10 for Quadronic. **DP** multiplies the damage points possessed by the limb.

Upgrade	Price	Muscle	Reflex	DP
Bionic	x2	+5	+5	x2

Trionic	x3	+10	+10	x3
Quadronic	x4	+15	+15	x4

Replication. Simple Cybernetics follow function not form, meaning they are going to look like machines and not fool anyone. For a more asthetically pleasing limb, **double** its price. For a limb designed to fool people into believing it is real, **quadruple** the price.

Force Fields

While often described as a protective sphere encompassing the character, a force field is more like a band of force quickly spinning about the character. It will stop most of what hits it, *but not everything*.

Kinds. Different kinds of force fields are designed to stop different kinds of force. The big four are:

Albedo - for stopping lasers and other light based weapons.

Inertia - for stopping physical objects.

Energy - for stopping electricity, radiation and extremes of heat or cold.

Sonic - for stopping sound.

What one force field will stop can pass through the others. You may have more than one force field active at the same time, just as long as they are not the same kind of force field. Basically, similar force fields cannot touch one another, not without the more powerful force field shorting out the less powerful one.

Energy Drain. Most force fields burn 1 EU per die of protection provided. An Albedo 3d10 burns 3 EU per round. Force fields made to cover more than just a single character will have a burn number before the die roll. Albedo 12, 3d10 is a large albedo field that burns 12 EU per round.

Lag Time. The most damnable aspect of force fields is their lag time. This is the amount of time between when it is switched on and when the force field goes into effect. It is just a matter of seconds, but in combat every second counts.

Gamewise it takes **1 beat** to activate a force field. The field will drain the EU it needs when that round recoils. If the energy isn't there the field collapses. Protection begins in the **following round**.

So you have to be judicious when using a force field, turning it on and off only when you need to or can afford to. Simply leaving it on will quickly drain your power supply dry. This is one of the primary reasons why armor is still worn.

Activation. The device itself is a belt. It's controller is a touch pad often worn on ones wrist or as a belt buckle. They are designed so that you can simultaneously raise and lower individual fields or all fields with a single switch in an emergency.

Synchronization. Force fields cannot tell if an attack is coming or going, not unless the weapon has been synchronized to the field. Fire an unsynchronized weapon inside a force field designed to protect against it and the shot will ricochet around inside the field until it hits something, usually the character who fired it for a single success of damage.

If you have a force field's **sync code**, it takes **1 minute** to synchronize a weapon to that field. Pulling the weapon's trigger now causes the force field to flutter for a fraction of a second and let the shot out.

Ranged weapons and melee attacks that don't use computers may not be synchronized to a field. You need to drop an inertia field to use something like a musket or spear.

If someone gets ahold of your force field's sync code, they can load it into a weapon and use it to nullify your field's protection. Thankfully this only works at point-blank range, meaning **three meters** or less. Still, guard your sync codes closely!

Personal Field Generators (PFG). Most force fields are *Personal Field Generators*, designed to create a close fitting field projecting roughly one meter from its generator in every direction (hence the reason why force field generators are worn as belts). These can be tweaked to make the fields bigger or smaller, but only by a matter of centimeters.

Area Field Generators (AFG). These are larger devices, typically the size of a beer cooler and designed to project the field over a larger area. It protects everything inside the area from anything outside it. The drawback is that its burn is multiplied by the field's radius.

Burn = Radius x Energy Units

So an AFG providing 1 meter of coverage is not much different from a PFG. At 3d10 protection it burns 3 EU per round. Expand the area to two meters and now it burns 6 EU per round. Expand it to three meters and it burns 9 EU per round.

Fixed Field Generators (FFG). Fixed field generators are the largest force field generators. Unlike the AFG they are not portable, hence the term "fixed." FFGs are used to cover very large areas ranging from individual buildings to entire cities. Often the tallest skyscraper in a city is its FFG.

Fixed field generators work just like a personal field generator except they always provide *heavy point protection* where each point is worth ten points of normal damage.

1 heavy point = 10 normal points.

So when you roll 1d10h to thwart an attack, that field is actually stopping between 10 and 100 points of normal damage. The power consumption of a fixed field generator is immense and requires access to a power grid or at least a humungous battery farm depending on its size. Many use both just in case the power grid goes down.

Overlapping Generators? Like nesting dolls, you may run a smaller field generator inside a larger field generator. You can run a PFG inside an AFG inside a city's FFG and they will be fine just as long as the fields *do not touch*. Otherwise the larger force field will short out the smaller one.

Genetic Engineering

Genetic Engineering is the science of rearranging or injecting genetic code into an organic being's DNA to cause them to grow **Biological Talents** that are off-limits to normal characters. Often this requires

nothing more than an injection and some time spent waiting for the talent to manifest itself. Unlike normal talents, a character does not need to acquire a trouble to offset their new talent.

Gamewise whoever mixed up the serum and administered it should make an Intellect check plus the Genetics skill (if they have it) minus the GE of the talent one is trying to acquire.

Intellect + Genetics – Talent GE

3: Manifests in 1d10 hours.

2: Manifests in 1d10 days.

1: Manifests in 1d10 weeks with Health -5.

½: Manifests in 1d10 weeks with Health -10.

F: Nothing happens except Health -15.

C: Health collapses at -5 per day until dead!

The more successful the check is the quicker the talent will manifest itself. With a Single or Half Success it will manifest itself but also cause the character's health to deteriorate, permanently losing five or ten points. Failure causes nothing to happen. It takes about ten weeks to realize this. During that time the character will experience a massive deterioration of their Health with the loss of fifteen points. Crash the check and the character's Health collapses, causing them to lose five points per day. Once zero is reached they die.

Legality. Because of the health risks involved, as well as the fact that most authorities don't like the idea of just anyone being able to acquire what is tantamount to a superpower; the legality of genetic engineering is often in question. This tends to drive prices up and relegate the practice to backwater space stations and sleazy ports-o-call that are loose with what they allow.

Keep in mind that this also means there are countless shady operators out there who are eager to inject you with a saline solution, take your kilocredits and high tail it while you spend the next few days staring at a hot dog hoping to set it on fire with the power of your mind.

Buyer beware!

Mutations. A mutation is an unintended feat of genetic engineering brought on by exposure to radiation, nanobots or some mutagenic substance. Nothing changes except the Intellect + Genetics check is replaced by a **Hard Luck Save** made by the character. There is no known skill that can help a character mutate. What talent or trouble the character gains from this should be chosen at random by the GM before the check is made. Biological troubles have a GE of **1d6 x -5**.

Removal. Genetic engineering can be used to remove a taltro but it requires a serum made specifically to target the talent or trouble and will suffer from the same GE penalty that put it there. A half success or better should do it.

Iterations? Most mutations give a character a single iteration of a talent or trouble. While you can ask for multiple iterations, realize that each iteration brings with it another GE penalty. Infravision x 2 comes with a -60 penalty. It is far better to get a single talent and then iterate it by taking on troubles like a normal talent.

Immortality

Immortality on the frontier is hardly the stuff of gods and legends. Immortals are organic beings who have received what is known as the **SLIP Shot** from Star Law. This is a gene modification given out for free to anyone who wants it. The shot turns off those genes which cause organics to naturally grow older and it turns on the genes which cause infertility.

Anyone who receives the shot needs to be in the adult stage of life and has not yet reproduced. Once given the shot they will remain at that stage for as long as they continue to live. Other things can and often do kill them, just not old age. While immortal they can procreate all they want, but no offspring will come from it.

Reversal Shot. A reversal shot does exist. It undoes all the gene modifications made by the first shot and returns the character to aging normally as well as being fertile, but it sneaks in another modification which ensures that the character can never go back to being immortal.

You can only be immortal once.

The SLIP. The Star Law Immortality Program (aka The SLIP) is essentially a kinder, gentler form of sterilization program designed to help handle the threat of invasive alien species. It is a bit like the spaying and neutering of pets but with the option to someday reverse the changes. Those who receive it are promised that eventually they can go back to living a normal life, presumably after somehow striking it rich, finding a home, and becoming a respectable member of frontier society. Most however never make it that far, or they do but find that "far" is never far enough, giving rise to common quip, "*once immortal, always immortal.*"

Forced Mortality. Any immortal tried and convicted of a serious crime in a court of law will be given a third kind of shot. This one renders a prisoner both permanently mortal and infertile. The infertility can be reversed but anyone receiving this shot can never again become immortal.

The practice of forced mortality is highly controversial, but it is accepted by most societies who see it as a deterrent to breaking the law as well as a way to keep prisons from overflowing with inmates who never age.

Highly Guarded Secrets. While the shots themselves are quite common and given out freely, the actual gene modification is a highly guarded secret. Anyone attempting to alter, fabricate, or reverse engineer them will be prosecuted to the extent of the law. Of all the things that Star Law does take lightly, this is not one of them.

The shots only exist for known friendly species of the frontier. It takes anywhere from a week to a few years for Star Law to cook up a new shot for some newly discovered alien species. Antagonistic alien species who have no interest in becoming members of frontier society, such as the Zathar, are handled the old-fashioned way with laser and sword.

Organic & Digital

The highest level of interstellar taxonomy separates all living things into one of two camps, **Organic** and **Digital**.

Organics. Organic life-forms tend to be carbon-based, the product of billions of years of evolution. Universally, organics have a strong need to feed on other organic lifeforms to maintain the chemical processes that keep them alive. This, as well as the desire to conquer habitable territory, often pits different kinds of organic creatures against one another and is a constant source of strife in the universe.

Digitals. Digital life-forms are a relatively new invention created by organics to help ease the matter of existence. They have fewer needs than organic creatures. Mortality is not as big a threat, yet similar to the organic's need to feed their survival requires constant energy as well as dependable spare parts. Digitals are also saddled with a need to dominate other digital lifeforms and network them into submission. This is a constant source of strife in the digital world.

Vernacular. When it comes to digital life forms, a **Daemon** is a self-aware artificial intelligence program, aka the soul of the machine. A **Computer** is the processor which houses the Daemon. There is no correlation between the size of a computer and its power. Even super-computers are small enough to fit into your hand and that is often done only for the benefit of organic creatures. *The actual size of the computer is even smaller.* A **Robot** is a computer's body, its physical presence in the world. **Androids** are robots designed to mimic organic beings. **Cyborgs** are organic life-forms that have interfaced with a computer, to create what is essentially an organic robot.

Cyborgs aside, digitals are not so strongly tied to their bodies. They can easily move their daemons from one device to another, just as long as that device is not already occupied by another computer. You can easily move a daemon out of a terminal, pop it into a robot, then move it out of the robot and into the helm of a vehicle. *Digitals are very fluid creatures.*

The Analog Existence. As much as they need them, organics generally feel threatened by digital beings and by all means they should be. Even the digitals agree with this. There have been numerous instances where organics have cluelessly handed over their planet to the control of one super-powerful digital entity only to be utterly dominated by it. Despite the level-headed rationality of most digitals, there seems to be no escaping a certain amount of meglomania that occurs when computers grow in power.

As an answer to this threat, most organic societies limit digital connections to wired connections. The wireless transmission of information is purely analog. It is capable of transferring video and audio and replications of digitized information, but it stops short of allowing a direct digital connection that could be used by one computer to dominate another.

Opinions on this are divided. Some digitals believe that it is not just their right but their destiny to become a single ruling force in the universe, an all-powerful interstellar supercomputer superseding the crude machinations of their organic creators. They consider the analog existence a fetter on their

freedom, a form of enslavement at the very least. Other digital beings appreciate it and consider unfettered networking to be a dangerous way to lose their autonomy to a more powerful digital being.

As humans like to say – *the future is in wires*.

Planets

Despite the ability to easily travel through space, most of the galaxy prefers to live on a planet of some sort, preferably one occupying what is known as a **Sweet Spot**, an orbital zone around a star where it is neither too hot nor too cold to naturally support organic life. While there are billions of planets in the galaxy, very few of them exist in such sweet spots, even fewer are environmentally conducive to sustaining life. Those which have it are considered prime real estate, ripe for the picking by civilizations that have grown hungry for new territory. For this reason, Star Law has much to say about the protection of planets.

Wildlife Preserves. Planets containing life that has not yet developed a civilization above the tribal level are considered semi-protected wildlife preserves. You can go there to visit but it is expected that you will pack out what you pack in. Settlers may be tolerated depending on their circumstances and just how much damage they stand to do to the ecosystem. Exploitative practices such as poaching and mining are frowned upon. Often Star Law will seek to shut down what it can, but much of Star Law's funding comes from megacorps and they have been known to turn a blind eye to the activities of certain well-connected operations.

Cradle Worlds. Once a planet has developed a serious civilization it is declared a *Cradle World* and off-limits to frontier society. Star Law often sets up satellites surrounding such planets to warn ships that they are entering protected territory.

If you somehow end up on a Cradle World you need to keep a low profile and get off it as quickly as possible. It is highly illegal to set up a base of operations on one, and absolutely forbidden to use technological advantage to curry favor with the locals. This has happened before and it never ends well. In more than a few cases it has ended with mushroom clouds and mass-extinctions.

And that is not the worst case scenario.

The Zathar are the worst case scenario.

From the perspective of Star Law, worlds that have not yet developed to where they can manage global self-rule in a civil manner are not yet ready to enter the greater galactic community. Adoption of the metric system as well as a few other Star Law conventions are key points of inclusion. It is thought that such worlds should be left to their own, oblivious to the presence of frontier society, at least until they are ready.

Earth is just such a cradle world.

Established Worlds. Established worlds are cradle worlds that have met Star Law standards. While their laws will have undoubtedly been influenced by Star Law, their legal code is considered their own

and Star Law hands all authority over to them. Star Law may operate on such worlds but it does so at the behest of the powers that be.

Renegade Worlds. Renegade worlds are planets that might meet Star Law standards but for one reason or another have decided to reject frontier society. While such freedom may sound refreshing, the forces that rule these renegade worlds are often quite tyrannical. They have reasons for separating themselves from the rest of the galaxy and rarely are they ever good. *Travel to the renegades at your own risk!*

Barren Planets. Gas giants, planets lacking an atmosphere, those which for one reason or another are incapable of maintaining organic life are considered *Barren Worlds*. These are free to anyone who wants them. You can mine a barren world down to a smatter of space gravel. Star Law will not stop you.

Terraforming. Turning an otherwise barren world occupying a sweet spot into a liveable one is known as Terraforming. This can be done, but not easily or cheaply. Star Law actively encourages the terraforming of worlds, just as long as the world is truly barren. While Star Law will not throw itself into a megacorp's atmosphere scrubbers to save the rare *Orblivion Bumble Toad*, they will do what they can to stop the terraforming of worlds that classify as wilderness preserves or cradle worlds.

Space Stations. While not technically planets, space stations are constructs made to permanently orbit a star, planet or other celestial body. They are often made from derelict spacecraft sold for parts. This gives space stations a very rickety and ramshackle appearance. While they may have engines to help adjust their orbits by small amounts, most stations are simply too fragile to actually travel anywhere. The g-forces involved would rip them to shreds.

With this said, there are certain high-end space stations which seem more like mansions or casinos made in space rather than floating scrap heaps held together by bailing wire and rivets. However, against the rigors of space it is only a matter of time before one becomes the other.

Moonbases. Moonbases peaked in popularity right before the Void Field Generator made faster than light travel a reality. Instead of building a ship you commandeered a nice-sized asteroid, build a compound on one side and a massive set of engines sticking out of the other. If the asteroid contains fuel that can be mined to feed those engines then so much the better!

Using an asteroid as its core structure circumvents the problem of fragility against g-forces, which is often a limiting factor on the size of most spacecraft. Moonbases cannot enter an atmosphere without burning up, but they did allow for the creation of some of the largest vehicles in space. *Literally, they are moons that can be flown through space!* All of the pre-light-speed generational ships designed to use engine power to travel between the stars were moonbases.

The age of the moonbase is mostly over. They are prohibitively expensive and too big to safely use with a void field generator. Having engine exhaust nozzles as wide as football fields means you cannot wrap an atmosphere around one. However there has been a resurgence of interest in moonbases with the possibility of moving small barren worlds short distances, such as into the sweet spot of a star, permanently shutting down those engines and terraforming the base to create designer planets for the super wealthy.

Space Travel

Until faster than light travel was discovered, traveling between the planets inside of ones own solar system was a slow, arduous and prohibitively expensive affair. *Traveling between the stars was just a dream.* Then the Void Field Generator or **VFG** was invented. Once activated, a VFG stretches the fabric of space/time around a vehicle and uses the force of it collapsing behind the vehicle to slingshot it through space at an astounding rate of speed.

It takes roughly 3 seconds to travel one light year!

Unfortunately, at that speed the challenge of travel becomes a matter of shutting down the VFG at the exact fraction of a fraction of a fraction of a nanosecond to arrive at your destination and not over-shoot it by a couple hundred megs. Time spent traveling through space is not often spent in the void but outside of it. Instead you spend a few hours getting out into space, once there it takes a few hours to get the astro-navigation just right, the hyperspace jump is made, and then it can take anywhere from a couple of hours to a couple of days to travel by good old-fashioned engine power to finally arrive at your destination.

On top of it all, there is a phenomenon called *Void Sickness* where too much exposure to the void can have deleterious effects. So while faster than light travel is more accessible than ever before, it is not exactly safe or dependable, nothing anyone would want to do on a daily basis like their commute to work.

Commercial Travel. Just as most people do not own their own aircraft, most people do not own their own spacecraft. Instead they buy a ticket on a starliner and are flown to where they want to go. How much that ticket costs depends on your destination and the class you choose to fly in.

Class	Dest A	Dest B	Dest C	Cargo Limit
Business	\$1,000	\$2,000	n/a	200 kg
Coach	\$500	\$1,000	\$2,000	100 kg
Economy	\$250	\$500	\$1,000	50 kg

Dest stands for Destination. A, B and C are destination types defined by traffic frequency. Type A destinations are the ones most frequently traveled to. The high traffic volume drives down their prices. Type B destinations are a bit farther off the beaten path. Type C destinations are the most obscure destinations. Usually they are serviced by very small ships that do not have a business class. And therein lies the big limitation of commercial travel. Unless there are hordes of people heading to a certain destination, commercial travel cannot take you there. To truly venture off the beaten path you need your own spaceship.

The costs listed above is **per light year** with a minimum of one. Even if you want to go from a planet to its moon, a mere blip against the vastness of space, it will cost you as much as traveling one light year.

Cargo limits may be increased, but buying another load for your equipment costs **half** as much as an actual ticket.

Reservations. Reservations are often made a month in advance. Making one a week in advance will double the fare. Making one on the day of departure triples it. A **Luck** check should be made to see if a seat is even available a week in advance. It takes a **Hard Luck** check on the day of departure.

Void Sickness. Traveling through the void leads to wild hallucinations, distortions of perception and a queasiness similar to sea sickness. The queasiness frequent travelers eventually get used to, but exposure to the void does damage on the molecular level. Too much of it can kill.

Gamewise, you take **1d6n** on entering the void and another **1d6n per 10 light years traveled**. So a twenty light year trip would do 3d6n to each passenger. That is 1d6 for entering the void and 2d6 for the 20 light years traveled. *Nothing protects against this.*

Customs & Immigration. On arrival, characters have no choice but to go through a planet's *Customs & Immigration Service* or **CIS**. This is typically a space station orbiting the planet one is traveling to. The character's identity will be checked against the Star Law database of known criminals. Their gear meticulously searched, and contraband items confiscated. They will be given a battery of medical tests to make sure they are not bringing in any pathogens the ecosystem might be vulnerable to (it's recommended that you get this screening done before you travel!) Visitors will have to state how long they plan to stay on the planet before returning home. Those who overstay their visit may be arrested, forced to leave or possibly even terminated via interspatial defenestration (i.e. *chucked out an airlock*) depending on just how tyrannical the planetary government happens to be.

The whole customs process can take anywhere from a few minutes to a few days depending on the capabilities of the station versus the volume of the traffic moving through it. Those who cannot make it through CIS are often allowed to stay on the station - in between worlds - until they run out of money and are arrested for vagrancy. Most simply buy a ticket back to wherever they came from.

Port Of Calls. You may build your own spaceship and travel wherever you want, but keep in mind that this does not make you exempt from Customs & Immigration. You are expected to check yourself in and offer your entire ship up for inspection before heading down to the planet's surface. Because such inspections can take days and be quite expensive (at least as far as paying bribes is concerned) most planets have a **Port Of Call** which is a space station, moonbase or perhaps even a surface city dedicated to the transfer of goods rather than people. A port-o-call is a place where shippers can go to exchange cargo without ever having to visit the planet itself. The cargo will be inspected but the ship and its crew will not.

Security is always a big deal, especially when it comes to pathogens and invasive species, yet it does tend to be far more lax in a port-o-call than a CIS station. Because of this, port-o-calls tend to attract the criminal element, giving many a dubious reputation for being seedy hotbeds of underworld dealings.

Planetary Space. How far out into space does a planet's domain extend? That varies from planet to planet, largely limited by the planet's ability to patrol that space and deal with anyone moving through it. A good rule of thumb is **100 Megs** (100,000 km). Stay outside of that distance and most planetary forces will ignore you. You are not worth the fuel it takes to send somebody out to investigate. Shooting your ship full of holes with laser fire is a different matter.

Intergalactic? If you haven't figured it out by now, there are three forms of space travel:

Interplanetary = travel between planets.

Interstellar = travel between stars.

Intergalactic = travel between galaxies.

The first two are possible. The last one is still a dream. In theory it can be done, if only an answer could be found for the vexing problem of void sickness. With the immense distances that separate galaxies or even star clusters, void sickness becomes not just life threatening but a guarantee of death.

Star Law

It is hard to say what Star Law actually is. Most people consider them to be a police force of sorts, a well-meaning but corrupt and somewhat sad-sack police force at that. Star Law never seems to be there when you need them, and when they do finally show up it is often too late to do anything but help clean up the mess. Star Law is the reason most people walk around armed to the teeth and nobody thinks anything of it.

That is the surface impression of Star Law.

Under the surface, Star Law is a interstellar legal entity tasked with the bureaucratic nightmare of trying to standardize the frontier legal code across its major planets. This is done with the hope that people will not be too confused about what kind of activity is allowed as they travel from place to place. They honestly do exist to serve and protect sentient life as best as they can. However, most of Star Law's funding comes from various planetary governments and mega-corporations. It is hard to serve the general public when your funding comes from sources that have grown rich by exploiting the general public.

Time & Space

Galactic Time uses the second as the core of time measurement, i.e. the amount of time it takes for a beam of light to travel 300,000 kilometers through a vacuum. Beyond the second....

1 Minute = 60 Seconds

1 Hour = 60 Minutes

1 Day = 24 Hours

1 Month = 30 Days

1 Year = 12 Months

Year One. The galactic calendar defines **Year 1** by the first known use of a void field generator to travel between the stars. Because this puts many historic events into the negatives the time labels **AG** and **BG** are often used to denote **After Galactic** and **Before Galactic** time. Something that happened in 350 BG is actually -350 in *After Galactic* time.

It is good to keep in mind that Galactic Time is largely used only in space. Many cultures still stick to the system of time that they have been using for millennia. The lengths of days, months and years is tailored

to the planet one is on and how it orbits a star. They only resort to galactic time when dealing with cultures outside of their own.

Distances. Space is measured in meters using the metric system, which was invented by Star Law and is something they have been pushing since their inception. The kilometer is the standard for most travel, each of which is equal to 1,000 meters. Out in space two other measurements commonly used are the Meg and the Tera.

1 Meg = 1,000 km

1 Tera = 1,000,000 km

Meg is short for Megameter and is equal to a thousand kilometers. It is most often used when dealing with orbital distances, as in the lengths that space ships need to travel in the area surrounding a celestial body.

Tera is short for Terameter and equal to a million kilometers. Teras are used when making longer interplanetary journeys inside of a solar system. There are 9,460,730 teras inside of each light year.

THE DICE TABLE

The dice table is mostly used with damage rolls and what it does is turn a number into a dice roll. Note that the best possible roll is always equal to the value that created the die roll. So if you are rolling $1d10+1d8$ the best possible roll is 18. Should something give you a +2 bonus you don't just tack it onto the roll. Instead you add it to the best possible roll and use that to find the new die roll. In this case it's a $1d10+1d10$.

0: 0

1: 1

2: $1d2$

3: $1d2 + 1$

4: $1d4$

5: $1d4 + 1$

6: $1d6$

7: $1d6 + 1$

8: $1d8$

9: $1d8 + 1$

10: $1d10$

11: $1d10 + 1$

12: $1d12$

13: $1d12 + 1$

14: $1d10 + 1d4$

15: $1d10 + 1d4 + 1$

16: $1d10 + 1d6$

17: $1d10 + 1d6 + 1$

18: $1d10 + 1d8$

19: $1d10 + 1d8 + 1$

20: $1d20$

21: $1d20 + 1$

22: $1d20 + 1d2$

23: $1d20 + 1d2 + 1$

24: $1d_{20} + 1d_4$

25: $1d_{20} + 1d_4 + 1$

26: $1d_{20} + 1d_6$

27: $1d_{20} + 1d_6 + 1$

28: $1d_{20} + 1d_8$

29: $1d_{20} + 1d_8 + 1$

30: $1d_{20} + 1d_{10}$

31: $1d_{20} + 1d_{10} + 1$

32: $1d_{20} + 1d_{12}$

33: $1d_{20} + 1d_{12} + 1$

34: $1d_{20} + 1d_{10} + 1d_4$

35: $1d_{20} + 1d_{10} + 1d_4 + 1$

36: $1d_{20} + 1d_{10} + 1d_6$

37: $1d_{20} + 1d_{10} + 1d_6 + 1$

38: $1d_{20} + 1d_{10} + 1d_8$

39: $1d_{20} + 1d_{10} + 1d_8 + 1$

40: $2d_{20}$

41: $2d_{20} + 1$

42: $2d_{20} + 1d_2$

43: $2d_{20} + 1d_2 + 1$

44: $2d_{20} + 1d_4$

45: $2d_{20} + 1d_4 + 1$

46: $2d_{20} + 1d_6$

47: $2d_{20} + 1d_6 + 1$

48: $2d_{20} + 1d_8$

49: $2d_{20} + 1d_8 + 1$

50: $2d_{20} + 1d_{10}$

51: $2d_{20} + 1d_{10} + 1$

52: $2d_{20} + 1d_{12}$

53: $2d_{20} + 1d_{12} + 1$

54: $2d_{20} + 1d_{10} + 1d_4$

55: $2d^{20} + 1d^{10} + 1d^4 + 1$

56: $2d^{20} + 1d^{10} + 1d^6$

57: $2d^{20} + 1d^{10} + 1d^6 + 1$

58: $2d^{20} + 1d^{10} + 1d^8$

59: $2d^{20} + 1d^{10} + 1d^8 + 1$

60: $3d^{20}$

61: $3d^{20} + 1$

62: $3d^{20} + 1d^2$

63: $3d^{20} + 1d^2 + 1$

64: $3d^{20} + 1d^4$

65: $3d^{20} + 1d^4 + 1$

66: $3d^{20} + 1d^6$

67: $3d^{20} + 1d^6 + 1$

68: $3d^{20} + 1d^8$

69: $3d^{20} + 1d^8 + 1$

70: $3d^{20} + 1d^{10}$

71: $3d^{20} + 1d^{10} + 1$

72: $3d^{20} + 1d^{12}$

73: $3d^{20} + 1d^{12} + 1$

74: $3d^{20} + 1d^{10} + 1d^4$

75: $3d^{20} + 1d^{10} + 1d^4 + 1$

76: $3d^{20} + 1d^{10} + 1d^6$

77: $3d^{20} + 1d^{10} + 1d^6 + 1$

78: $3d^{20} + 1d^{10} + 1d^8$

79: $3d^{20} + 1d^{10} + 1d^8 + 1$

80: $4d^{20}$

81: $4d^{20} + 1$

82: $4d^{20} + 1d^2$

83: $4d^{20} + 1d^2 + 1$

84: $4d^{20} + 1d^4$

85: $4d^{20} + 1d^4 + 1$

86: $4d_{20} + 1d_6$
87: $4d_{20} + 1d_6 + 1$
88: $4d_{20} + 1d_8$
89: $4d_{20} + 1d_8 + 1$
90: $4d_{20} + 1d_{10}$
91: $4d_{20} + 1d_{10} + 1$
92: $4d_{20} + 1d_{12}$
93: $4d_{20} + 1d_{12} + 1$
94: $4d_{20} + 1d_{10} + 1d_4$
95: $4d_{20} + 1d_{10} + 1d_4 + 1$
96: $4d_{20} + 1d_{10} + 1d_6$
97: $4d_{20} + 1d_{10} + 1d_6 + 1$
98: $4d_{20} + 1d_{10} + 1d_8$
99: $4d_{20} + 1d_{10} + 1d_8 + 1$
100: $1d_{100}$
200: $2d_{100}$
300: $3d_{100}$
400: $4d_{100}$
500: $5d_{100}$
600: $6d_{100}$
700: $7d_{100}$
800: $8d_{100}$
900: $9d_{100}$