



# JAPAN IS SHAKING

日本が揺れている

Seismology Project

By Jason, Sam, Emerson and Jackson!

# LOCATION

ロケーション

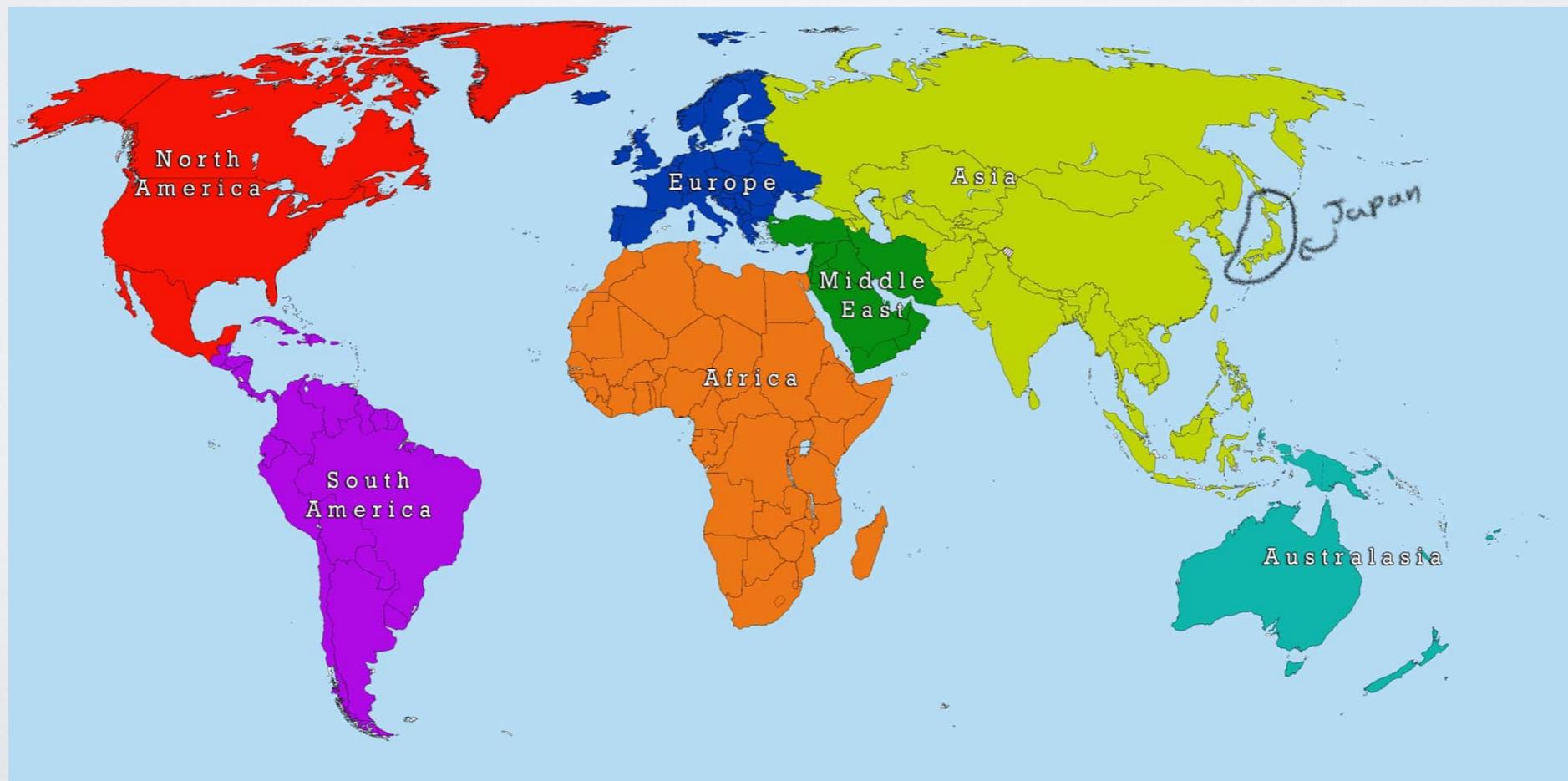
- The playground will be located in Moerenuma Park in Sapporo, Hokkaido
- The Park is very big so there will be enough room for another playground



# GEOGRAPHY OF JAPAN

## 日本の地理

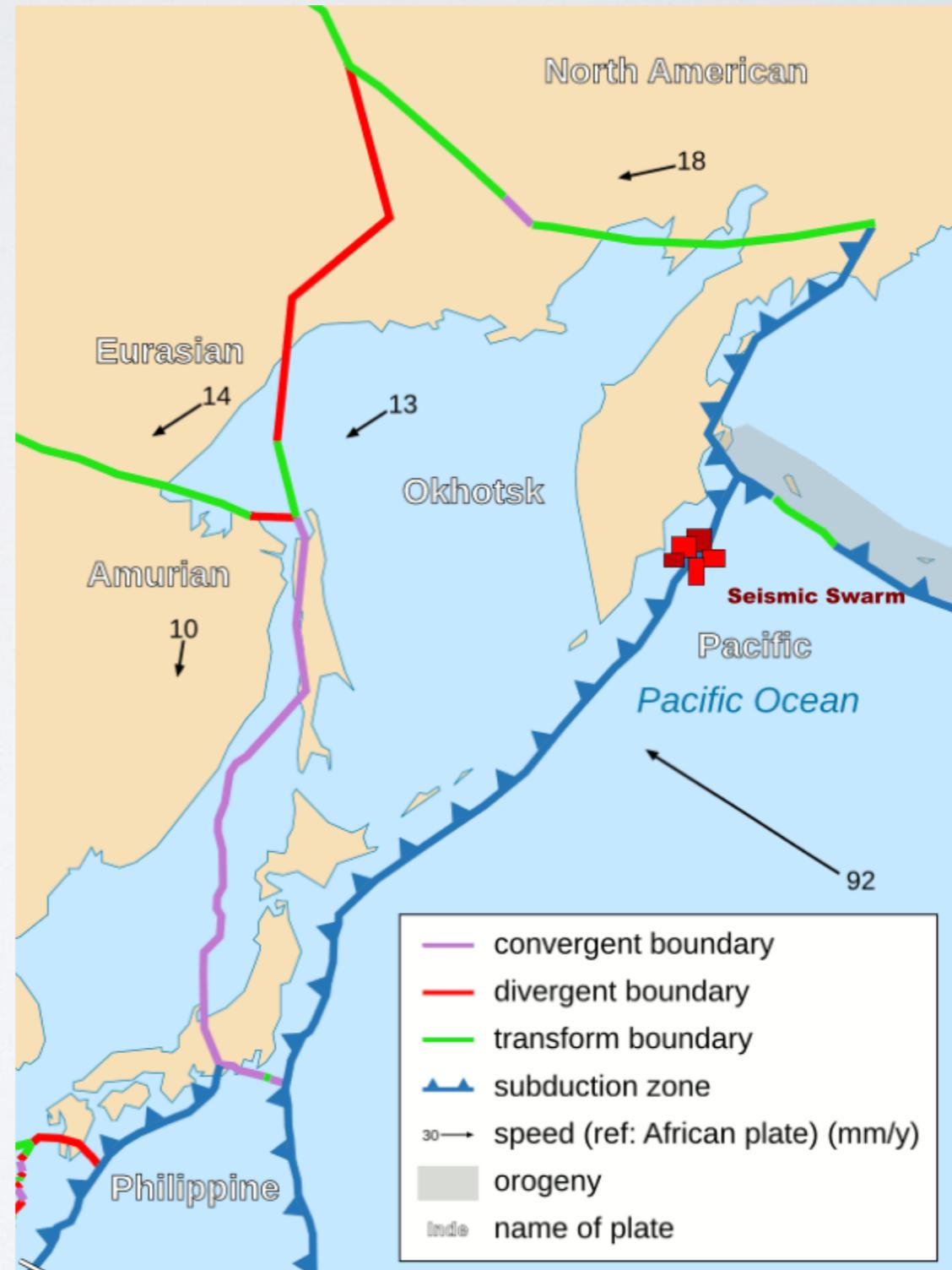
- Japan is located on the east coast of Asia.
- We decided to build our playground in Sapporo.
- Sapporo is located in Hokkaidō which is a northern island in Japan.



# EARTHQUAKES

## 地震

- There are two spots where earthquakes hit Japan. There are the ocean trench ones which happen because the oceanic plates push down or move under the land plates. The other ones are inland quakes which occur on faultlines between land plates, and also plate-boundary quakes, which are caused by friction.



## Island Gradually Sinking

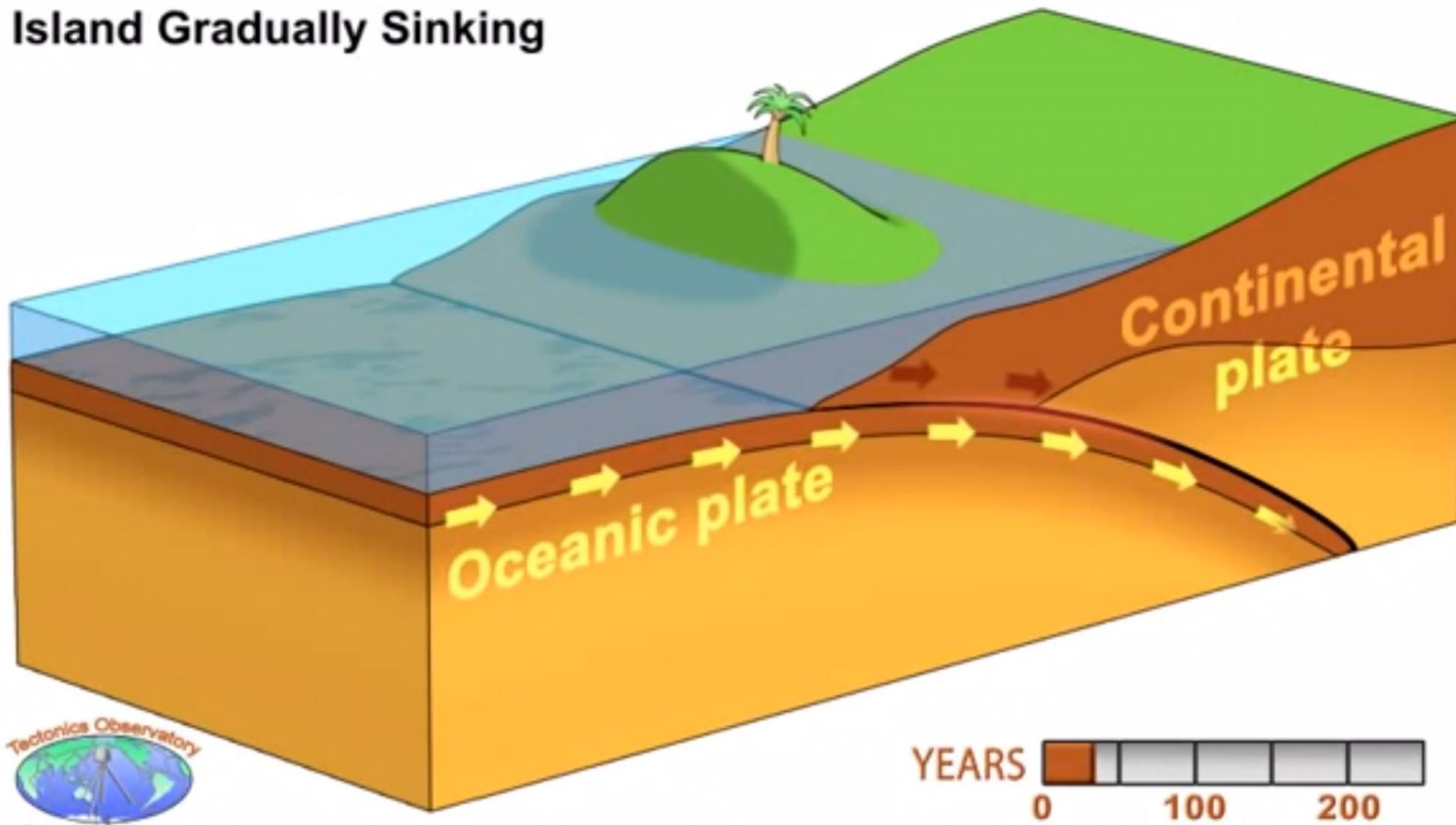
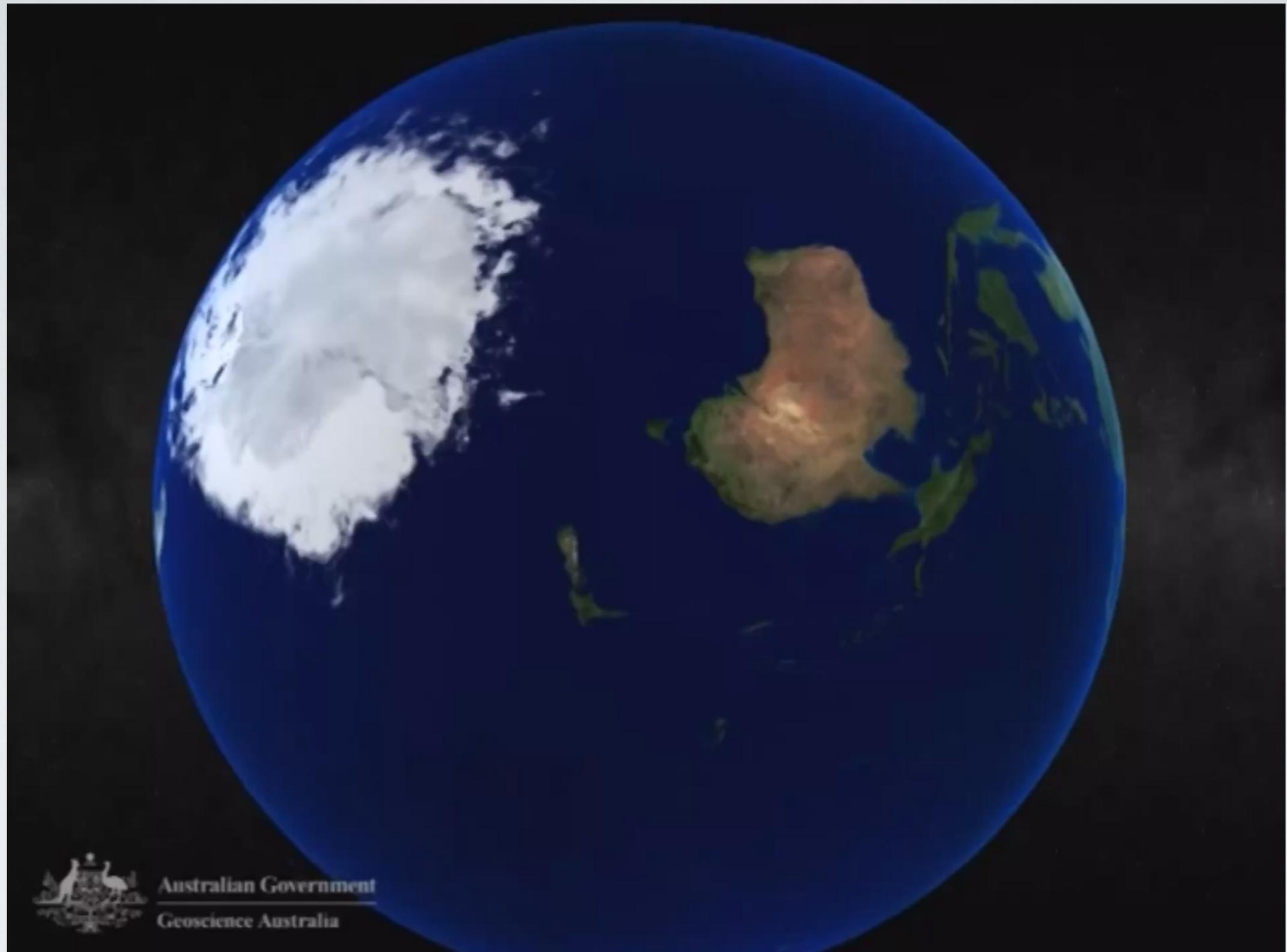


PLATE-BOUNDARY QUAKE SIMULATION

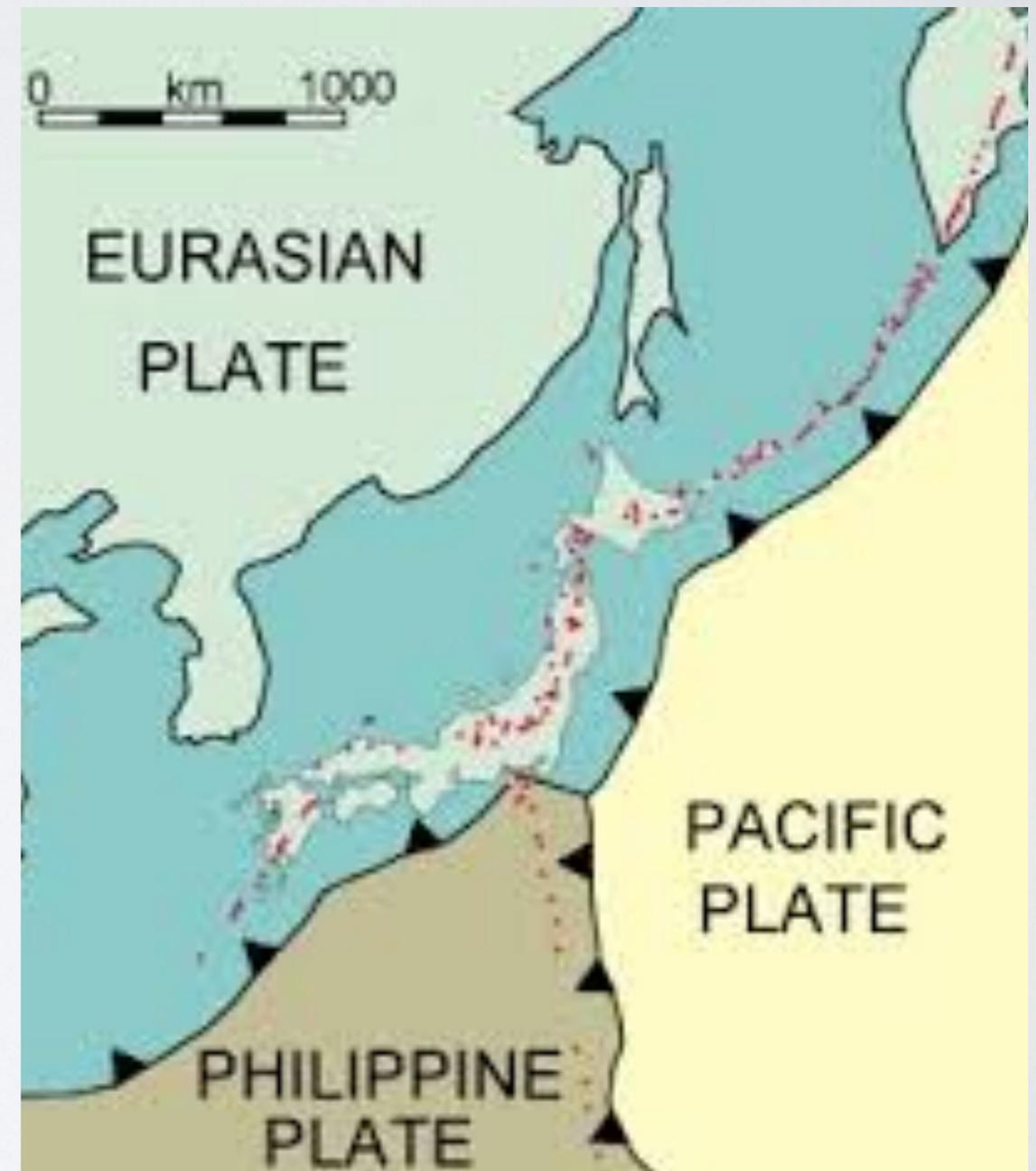


# HOW TSUNAMIS ARE CREATED

# WHY DO EARTHQUAKES HAPPEN IN JAPAN?

なぜ日本で地震が起こるのですか？

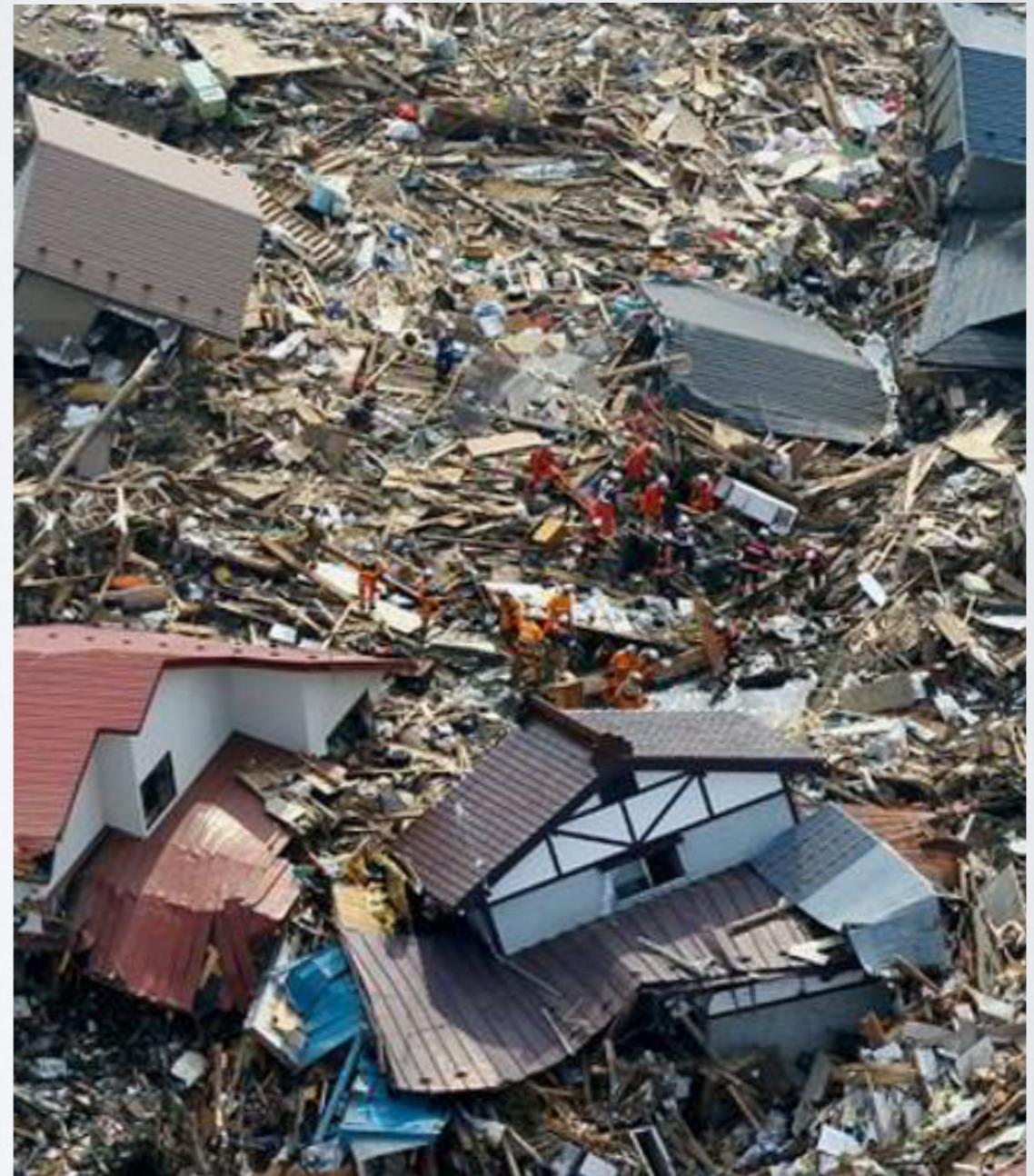
- 4 Major plates merge in Japan
- Eurasian, Phillipine Sea, Pacific, amd North American
- The plates all move in different directions, causing a lot of friction
- Tectonic makeup of Japan is complicated, with two ocean plates subducting/moving under a land plate on which the Japan is located.



# THE LAST BIG ONE

## 最後の大きなもの

- In 2003 on September 23 at 4:50am local time or 12:50 pst our time an 8.3 magnitude earthquake hit just 100 km off mainland Hokkaidō rocking the island. Power outages and extensive landslides were triggered as a result of the earthquake as well as a 4 meter tall tsunami! Over 800 people were injured and the earthquake was felt as far away as Tokyo.
- By October 3rd 2003 there had been a total of 65 aftershocks. The biggest measuring in a 7.0 on the Richter scale.



# THE REPAIR COSTS

## 修理費用

- Even though the earthquake was very powerful the damage to structures was not too great as most of the buildings in the area were resistant to earthquake shaking. The hardest hit areas were the coastal areas such as the sea and fishing docks and ports (most of the damage came from the subsequent tsunami waves). Thankfully there were no casualties but approx. 849 people were injured and many residential buildings were damaged. The total repair cost was at least 213 billion yen or 1.9 billion US dollars.



# AINU

- The Ainu people are residents to Hokkaidō. The Government believe that there are about 25,000-200,000 Ainu people that live in Japan. A traditional Ainu house is called a Chise. Their villages are called Kotan and they're usually located near river basins. A Chise is made out of bamboo grass or thatch or tree barks depending on where their living. A Chise is shaped like a rectangle or a square and it has three windows. They must have a window beside their door because it's believed to be sacred. All the houses have fireplaces near the entrance. On the east side of the house exists an Altar where ceremonies and offerings to gods conducted. Other buildings such as outbuildings has lavatories, storage rooms, drying racks for fish and cages for pets. Ainu hunters has pets such as bears because they are know to be sacred and the Ainu believe there is a god of bears.



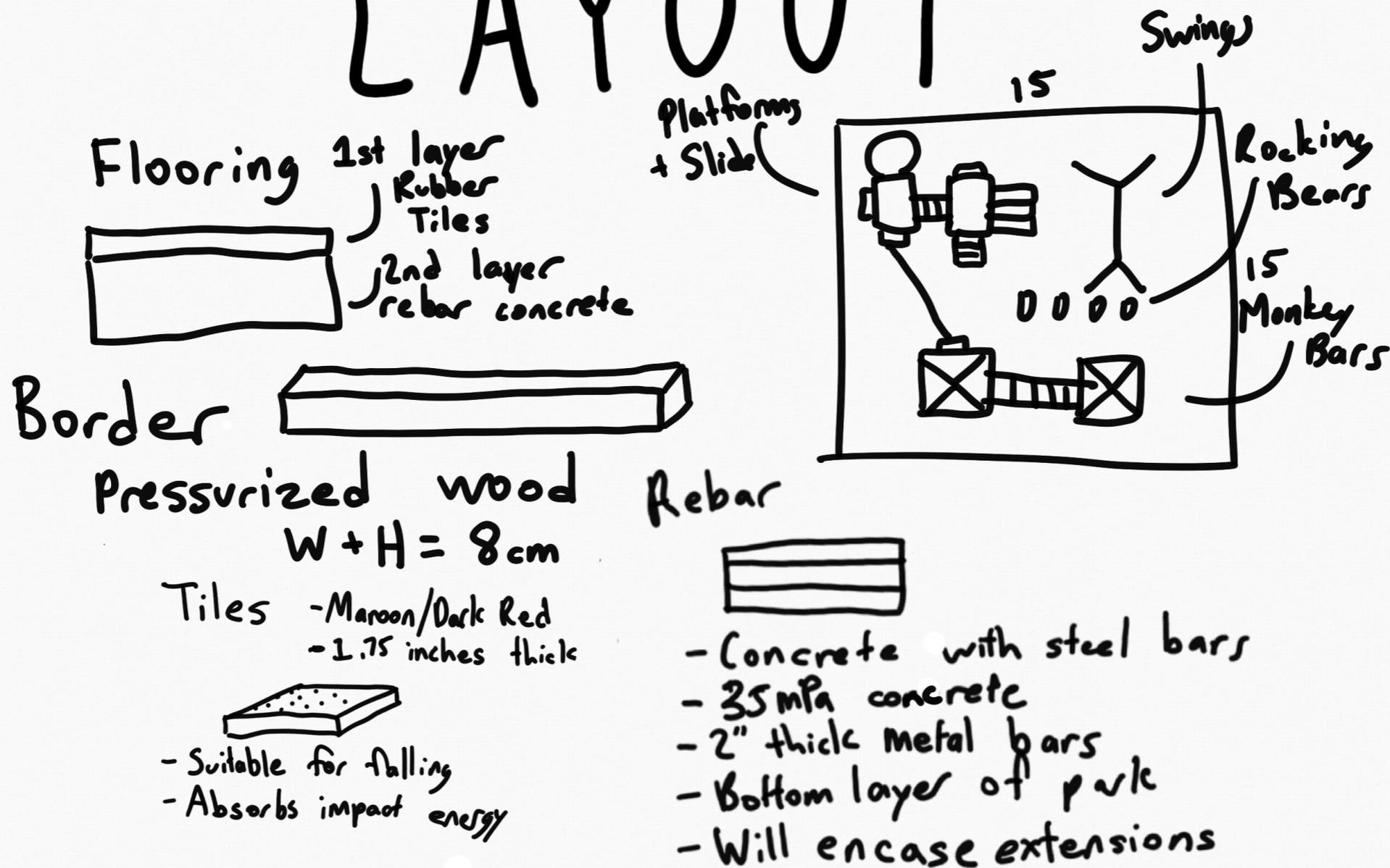
# INTRODUCING GANBAROU PARK

がんばろうパーク  
(Good Luck Park)

# THE LAYOUT

レイアウト

## LAYOUT



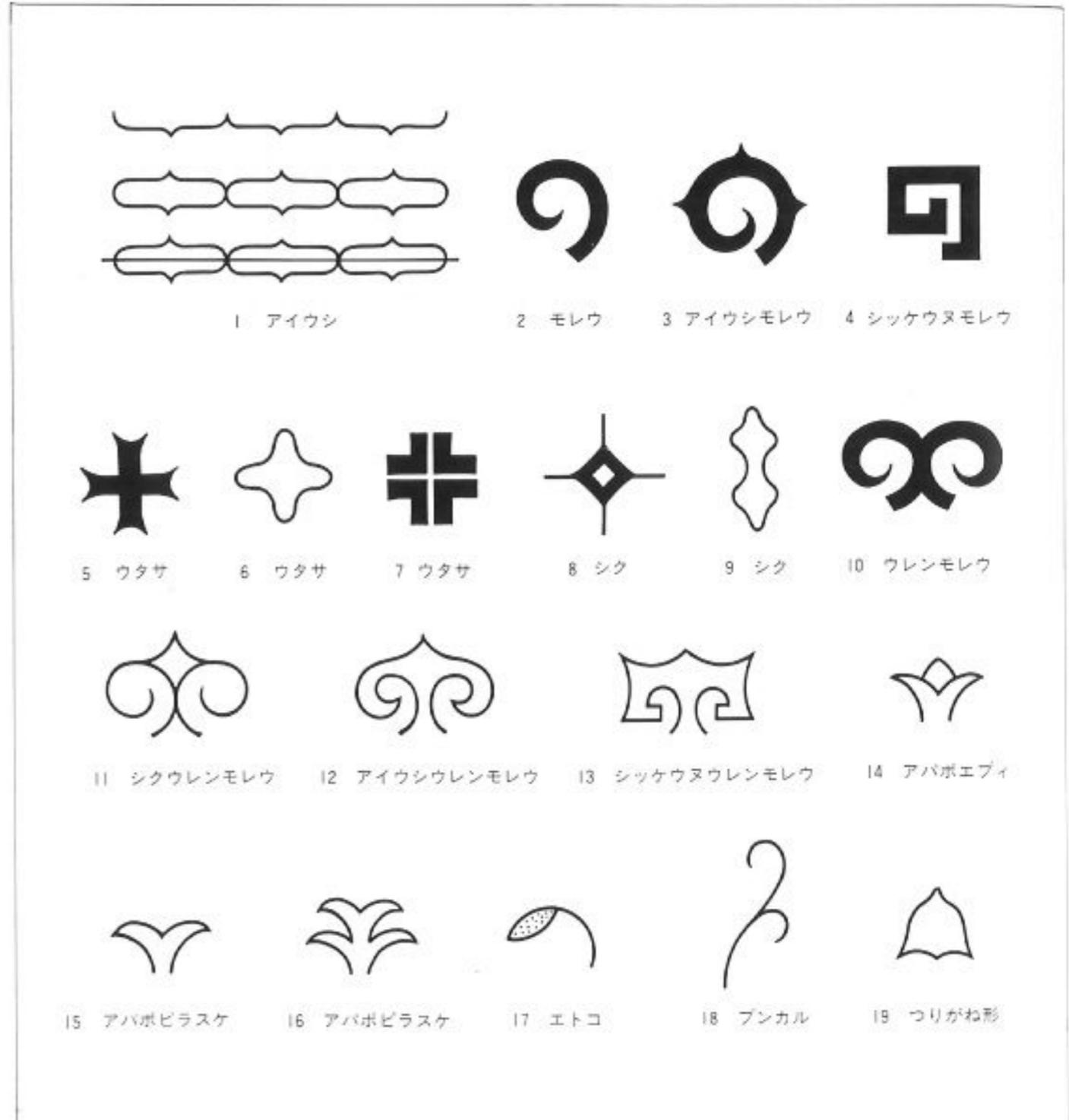
- All plastic attachments will be Qiguan PLDA plastic

# THE DESIGN

## 設計

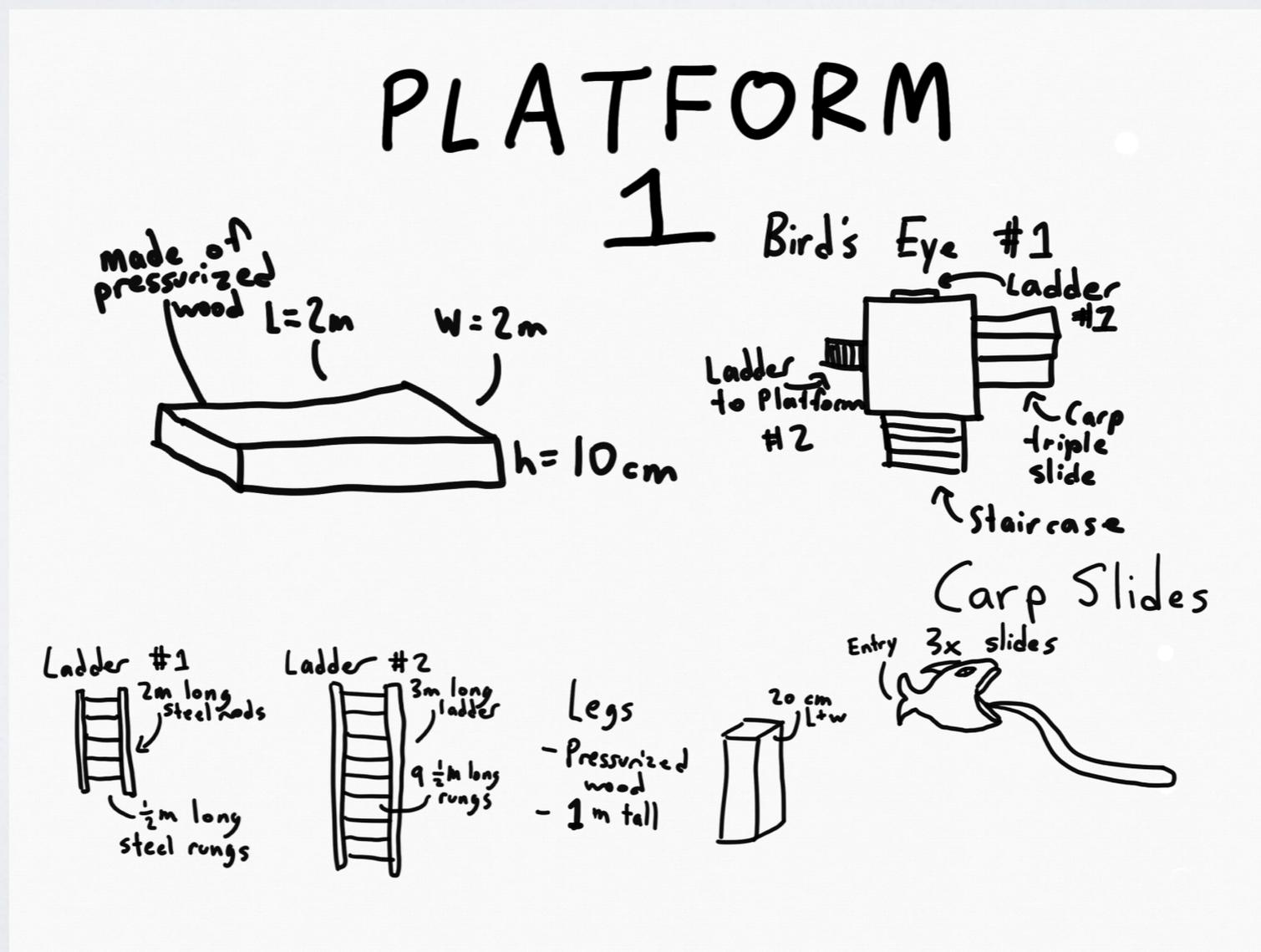
- We will use the kid-safe eco-friendly playground paint to paint different Ainu designs to symbolize good luck and good health

### アイヌ模様の基本型



# スライド SLIDES

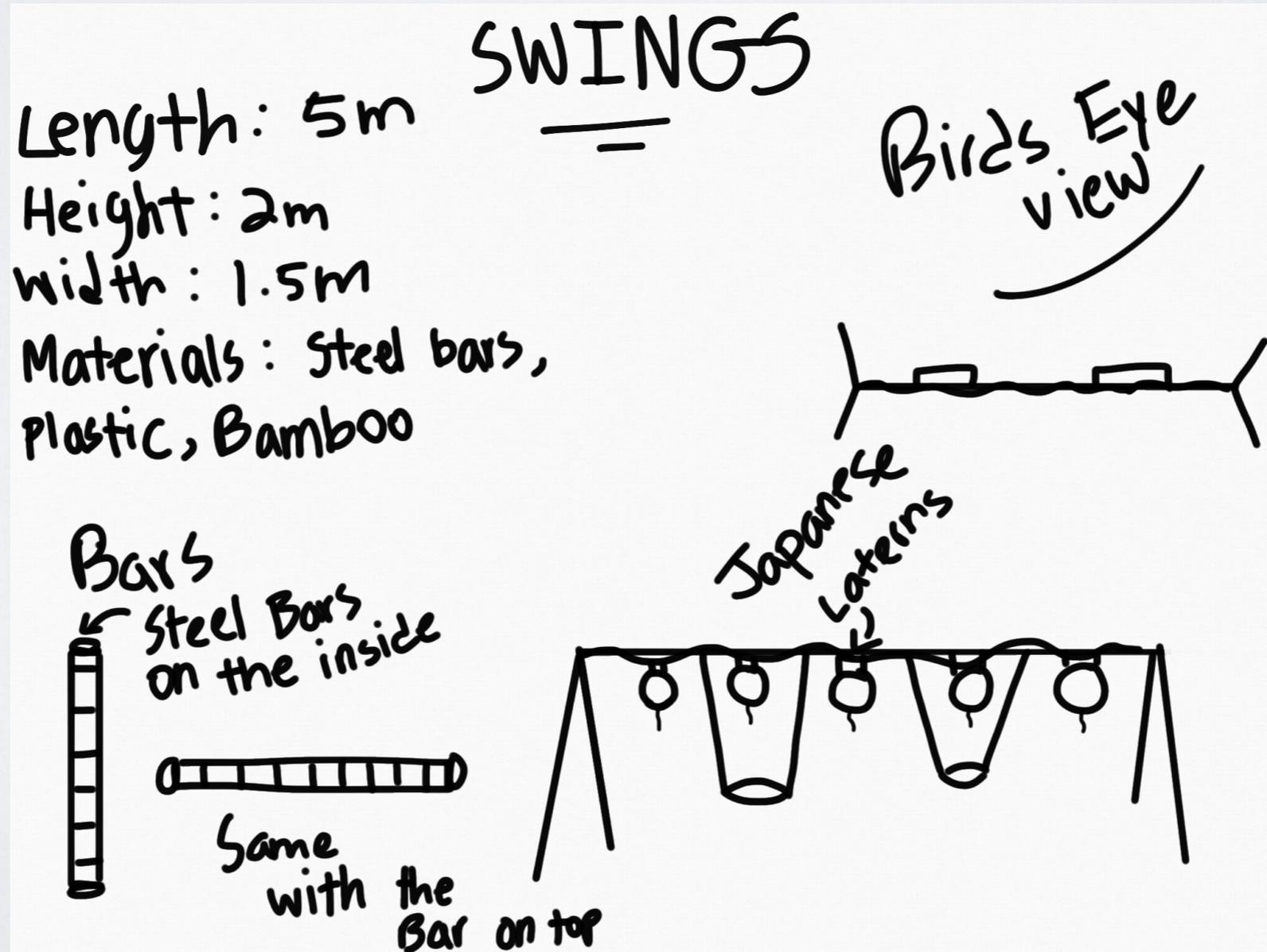
- The slides will be themed as classic Japanese animals. There will be a double slide, which will be off of the platform structure. The double slide will be themed as 2 carp at the top, the top of the slides resembling a tube slide. The slide would then be blue coming out of the carp's mouth, symbolizing water. The second slide will be from higher up. It will be a red tube slide that will be decorated like a dragon. The end of the slide would be the dragon head and the top will be the tail.



# SWINGS

スイング

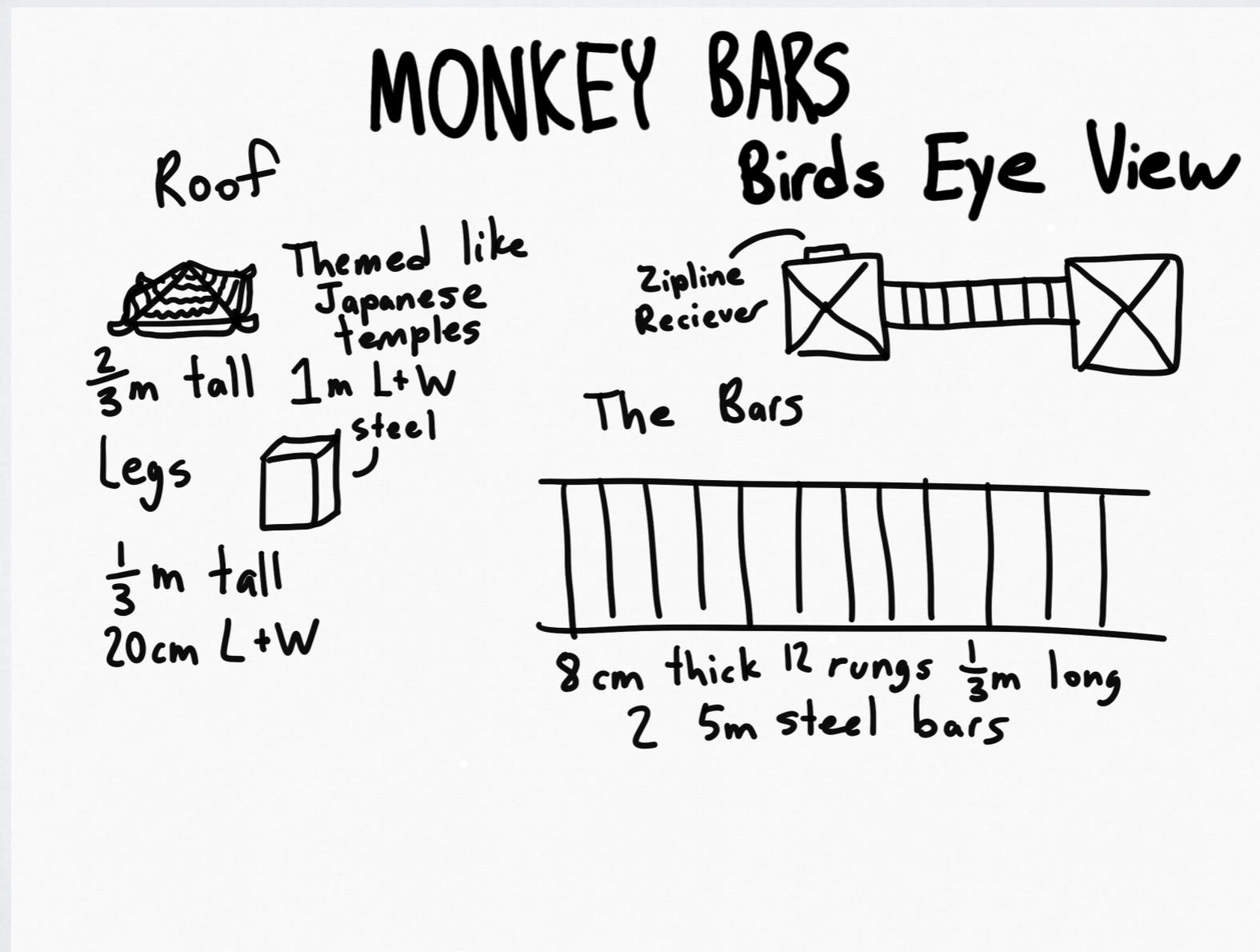
- The swing will have lanterns on the metal bar at the top. The swing itself will stay the same. The two side metal poles will be bamboos. We will make a hole through the bamboo and put a metal bar inside it to make it stable.



# MONKEY BARS

モンキーバー

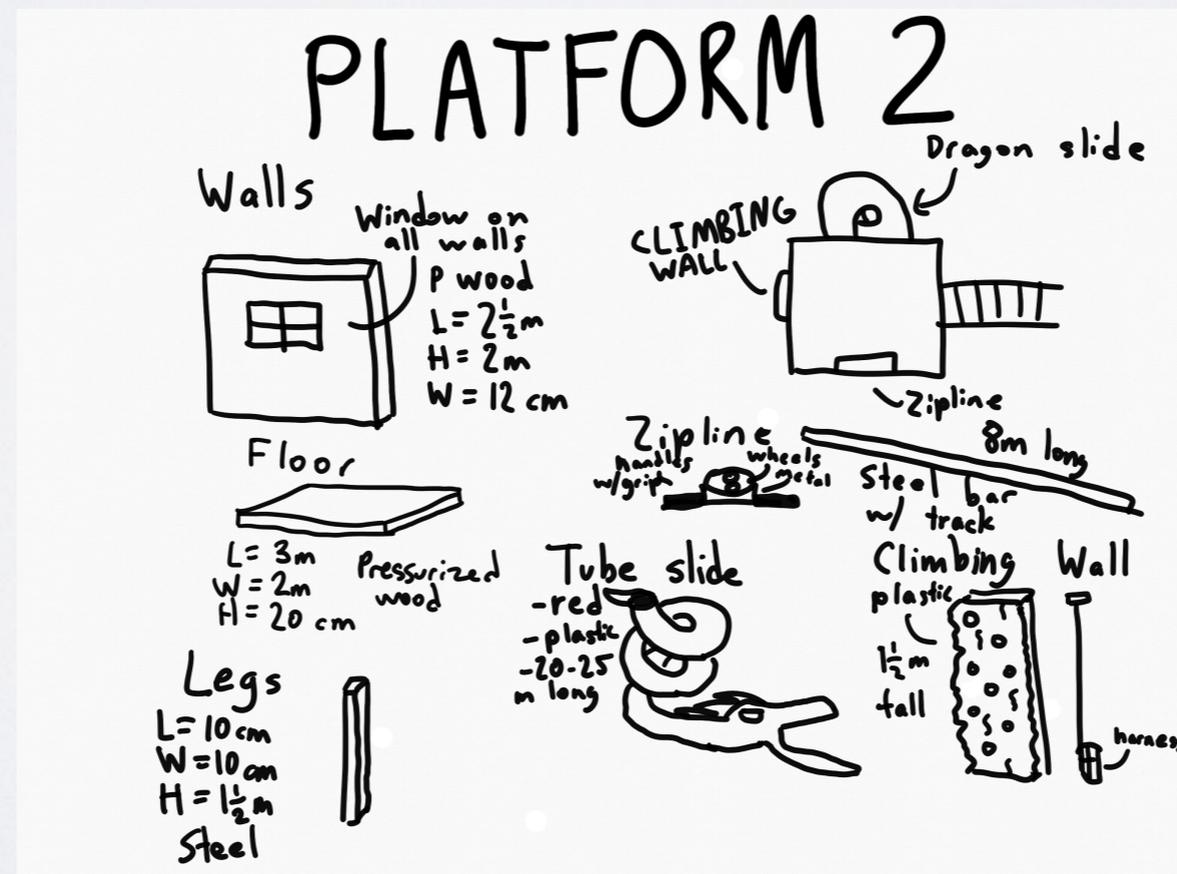
- The monkey bars will have two platforms facing each other. The monkey bar will be connecting the two platforms. The platforms' roof will have Traditional Japanese roofs. The monkey bars won't have roofs above them.



# AINU PLATFORM

## アイヌのプラットフォーム

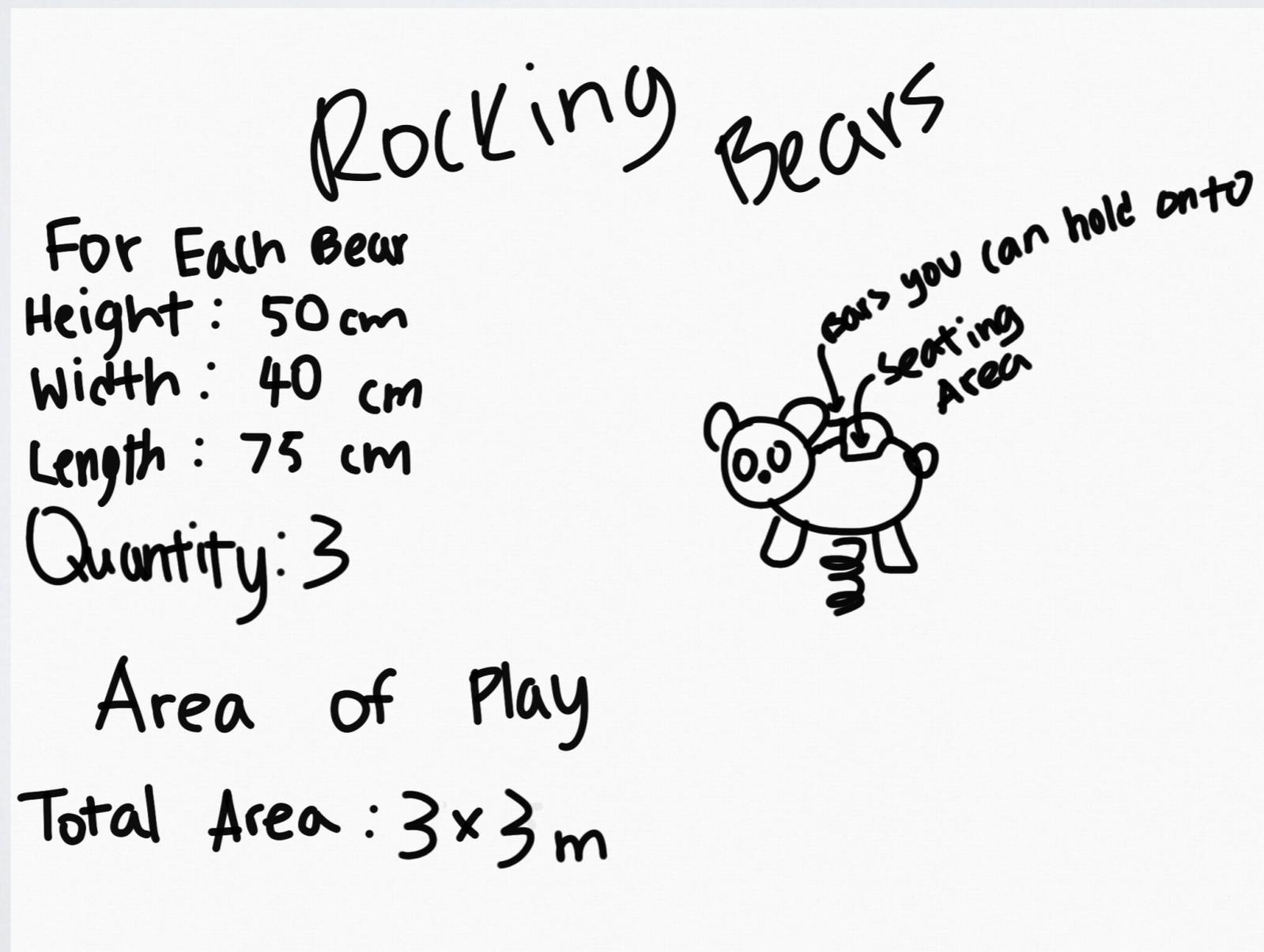
- There will be a platform in the middle, with a staircase leading up to it from the first monkey bar platform. This is where the carp slide is located. From here, there is a sloped ladder leading up to the higher platform, which will be shaped like an AINU hut. From this platform, there will be a zip line leading down to the 1st monkey bar platform. The dragon tube slide will also be located here. To the south of this structure will be the monkey bars. 2 smaller, lower platforms with the monkey bars connecting them. The swings will be to the North.



# ROCKING BEARS

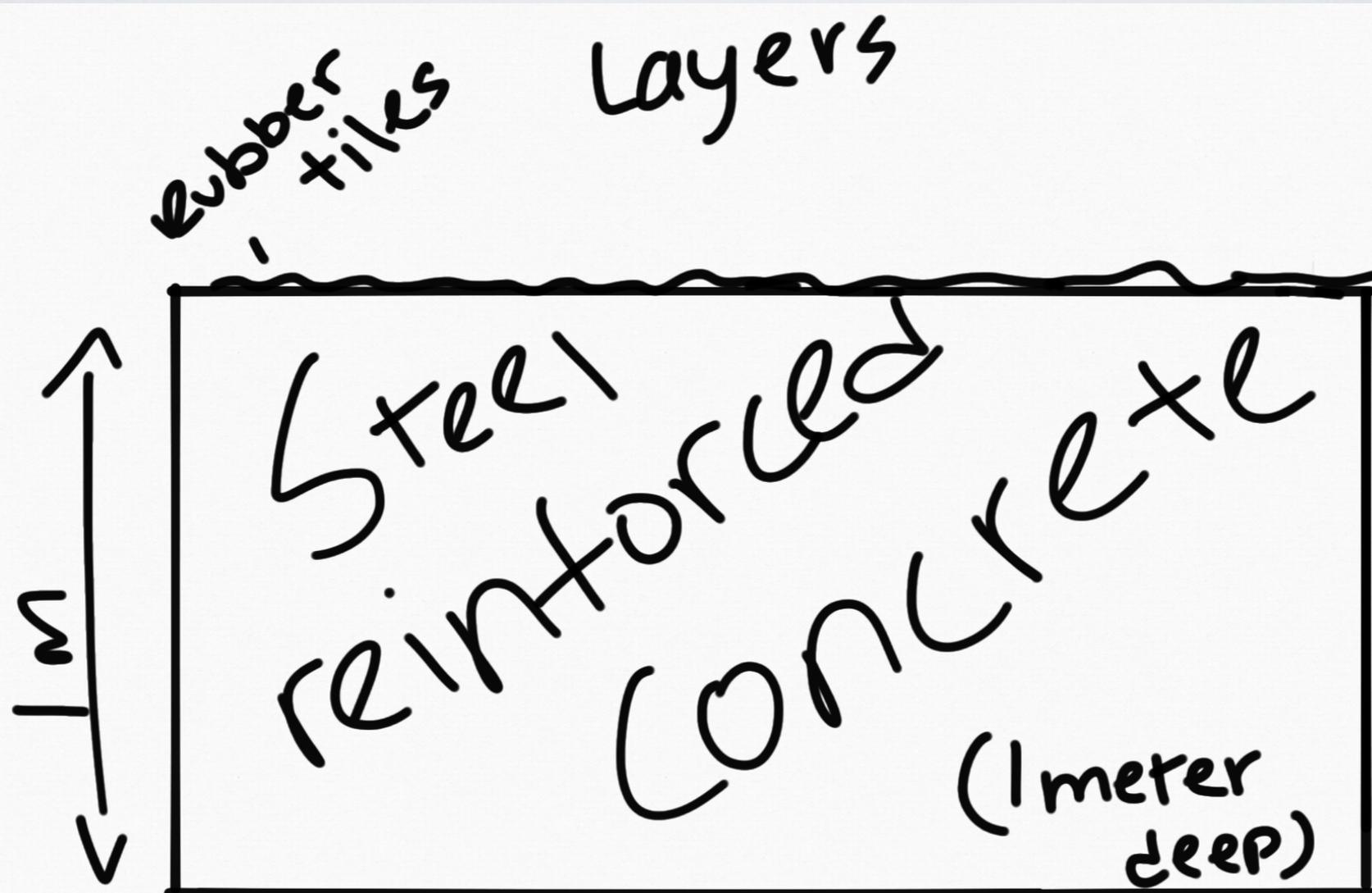
## ロッキンググマ

- There will be spring rocking horse things shaped like bears as bears are the sacred animals of the Ainu people. These will be to the southwest of the Ainu hut structure.



私たちの地面の下で

# UNDER OUR PLAYGROUND



# ECONOMY CHART

経済チャート

Finance Budget

Item	Cost (CAN)
General Contractor	\$4,350.00
Project Planning Engineer	\$3600.00
Labourers	\$21,510.00
Employee Housing	\$3248.93
Playground Equipment	\$6965.31
10 Pounds Of Carbon Steel	\$134.40
Steel Reinforced Concrete Bars	\$40.00
Wood	\$1037.08
Plastic	\$50.00
Bamboo Bars	\$40.00
Rymar Red Rubber Tiles	\$335.84
Roadcraft Paint Eco-Friendly Red And White Playground Paint	\$120.55
Concrete	\$45675.00
Yoshino Cherry Blossom Saplings	\$1019.40
Backhoe	\$1,600.00
<b>Total cost</b>	<b>\$89,725.58</b>
Leftover money	\$10,274.42

Playground Equipment

Name	Cost
Spring Riders	\$1,320.00
Red Tube Slide	\$1,150.70
Blue Triple Slide	\$937.32
Swing Set	\$887.00
Climbing Wall	\$901.42
Zip line Bar	\$667.87
Monkey Bars	\$1101.00
<b>Total</b>	<b>\$6965.31</b>

Employees

Employee	No. Needed	Hours Worked Per Day	Days Needed
Project Planning Engineer	1	6	15
General Contractor	1	6	15
General Labourers	4	6	25
Contractors	3	6	25
Heavy Machinery Operators	1	6	8
Iron Workers	1	6	20
Steel Fixer	1	6	20

- General Contractor
- Employee Housing
- Steel Reinforced Concrete Bars
- Bamboo Bars
- Concrete
- Leftover money
- Project Planning Engineer
- Playground Equipment
- Wood
- Rymar Red Rubber Tiles
- Yoshino Cherry Blossom Saplings
- Labourers
- 10 Pounds Of Carbon Steel
- Plastic
- Roadcraft Paint Eco-Friendly Red And White Playground Paint
- Backhoe

Finance Report

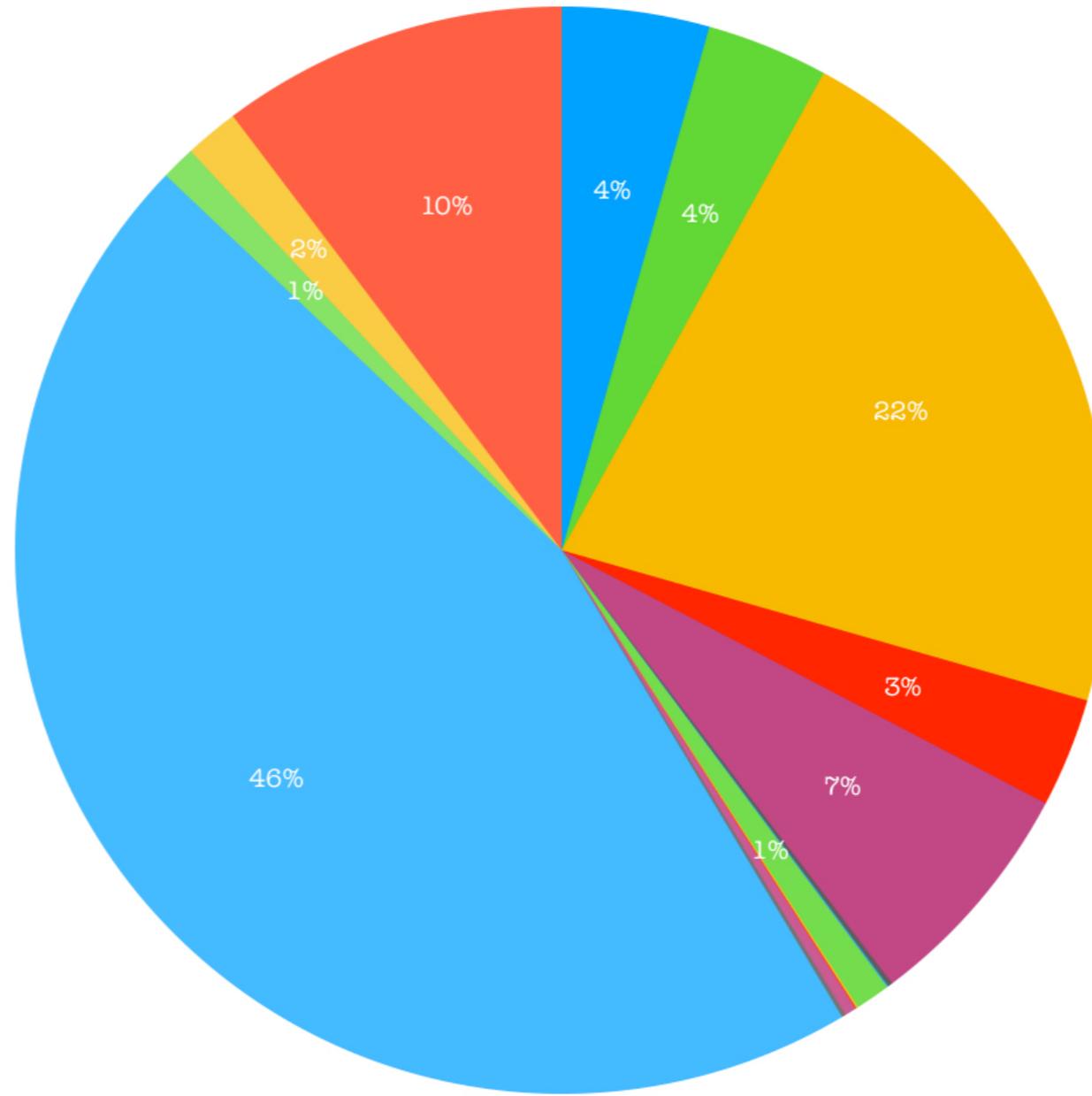
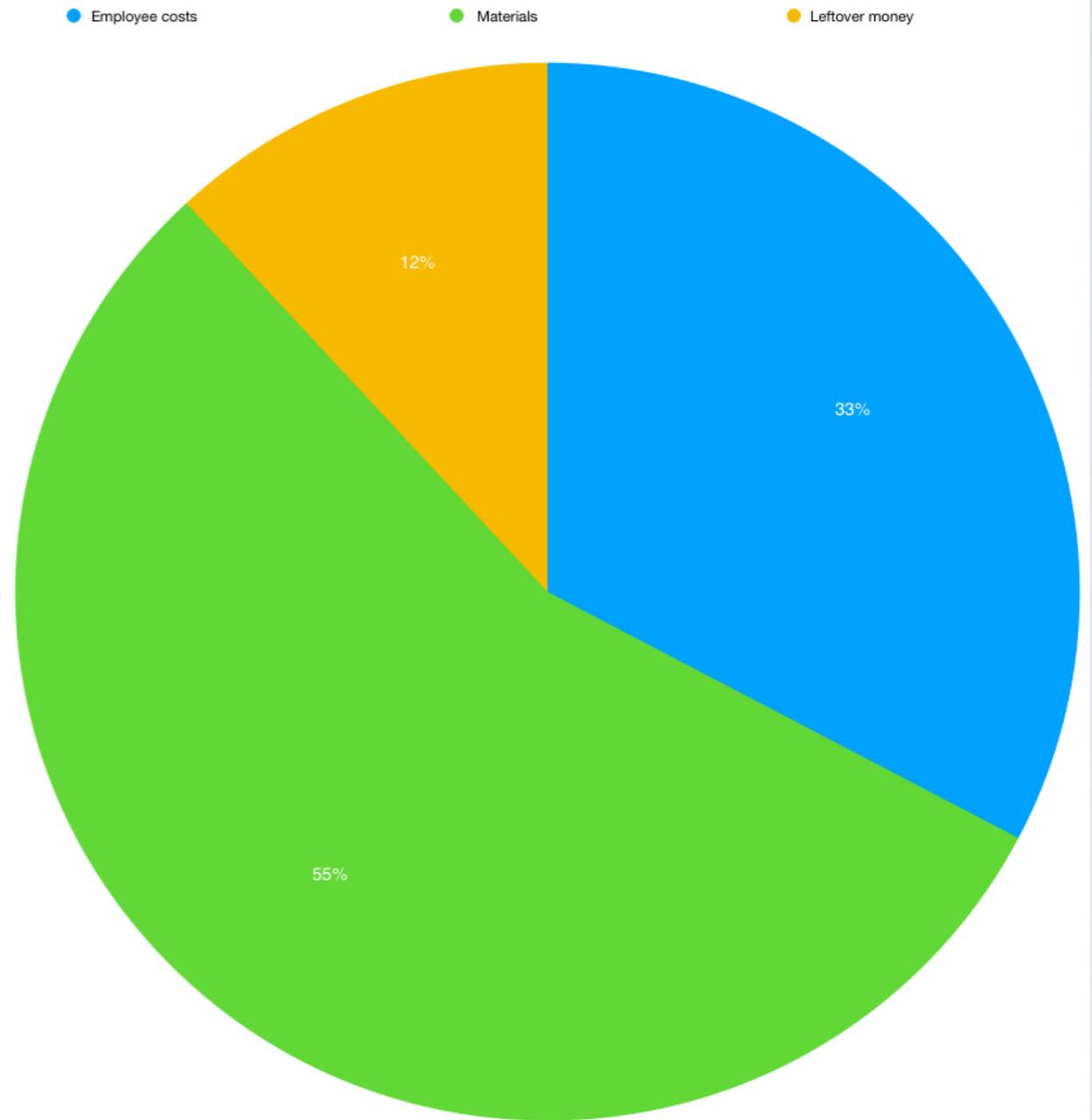


Table 1

Employee costs	Materials	Leftover money	
\$32,708.93	\$55,417.58	\$11,873.49	



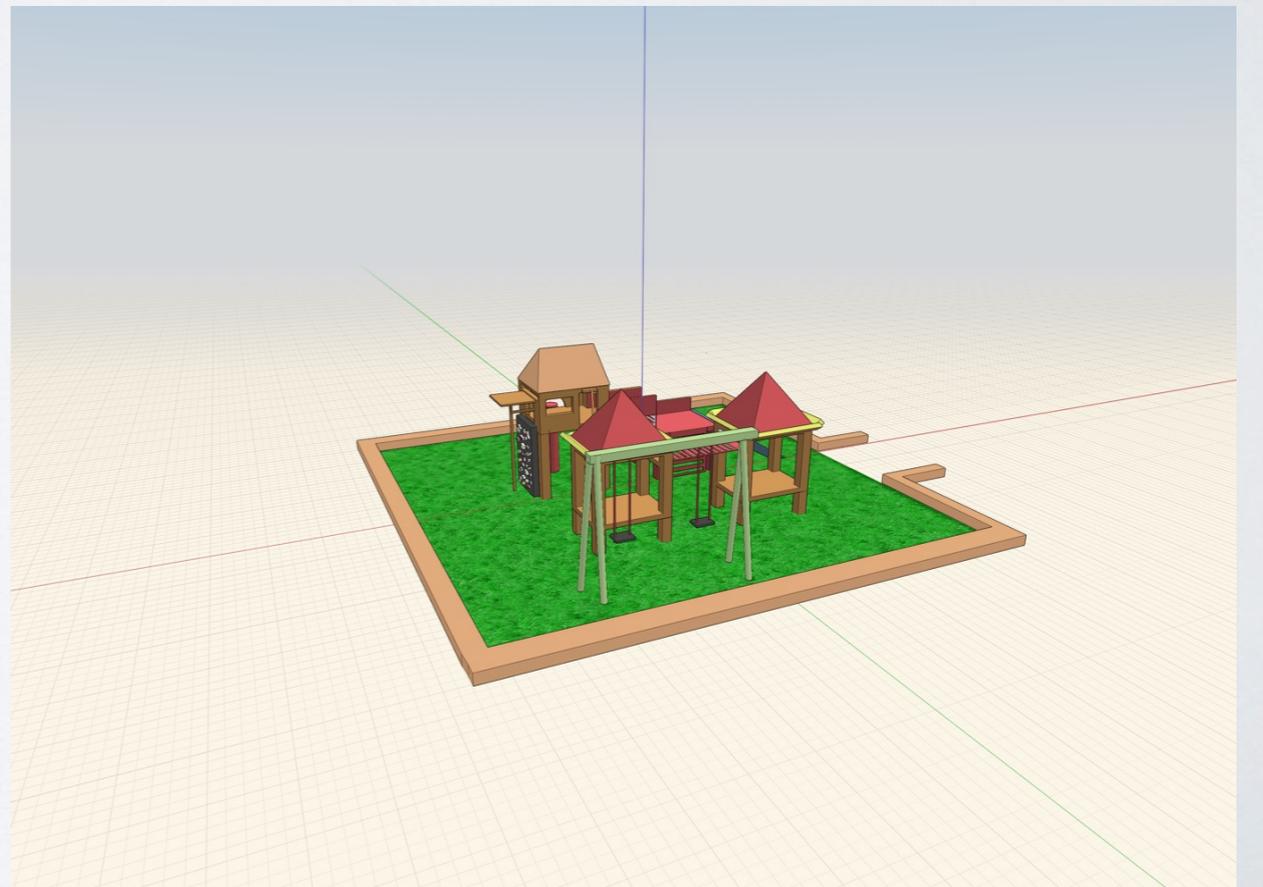
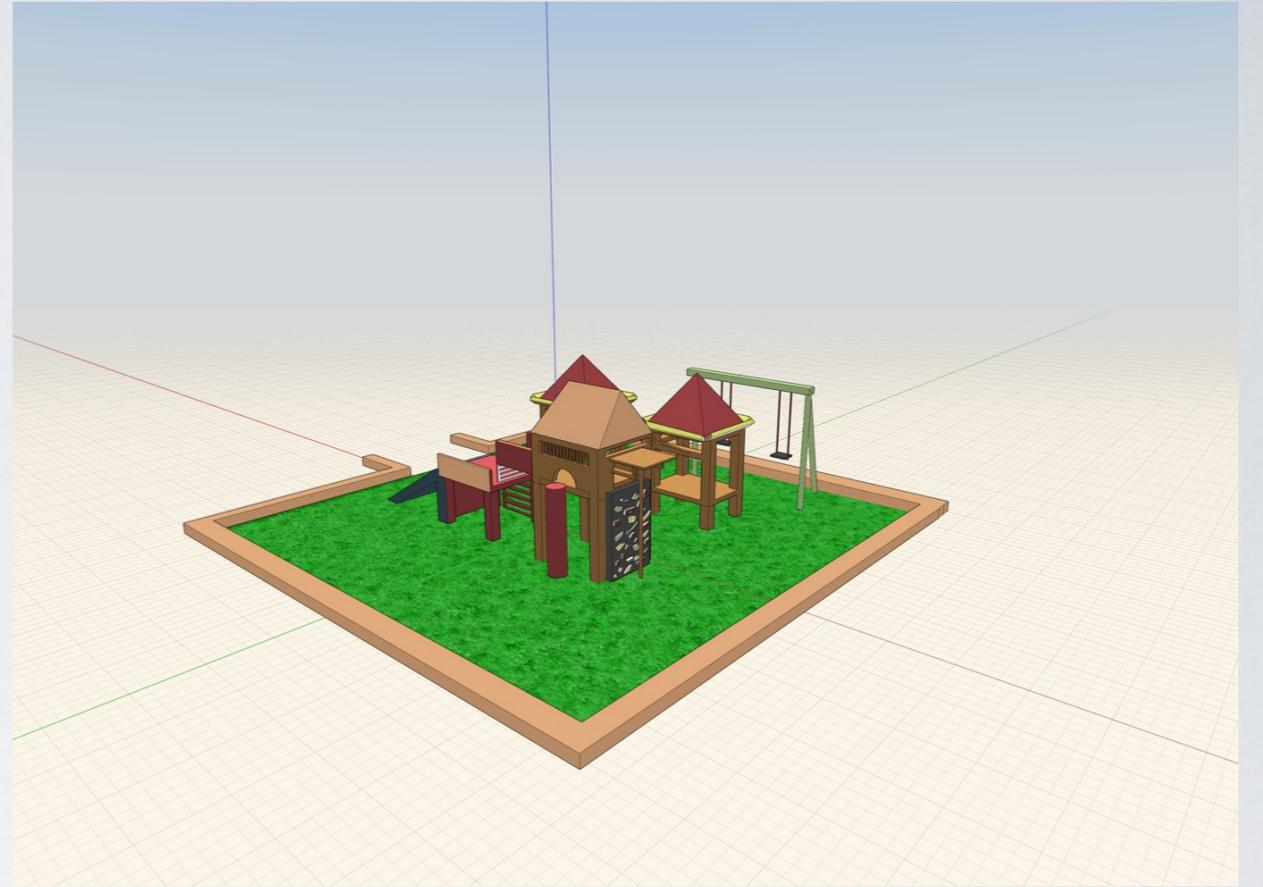
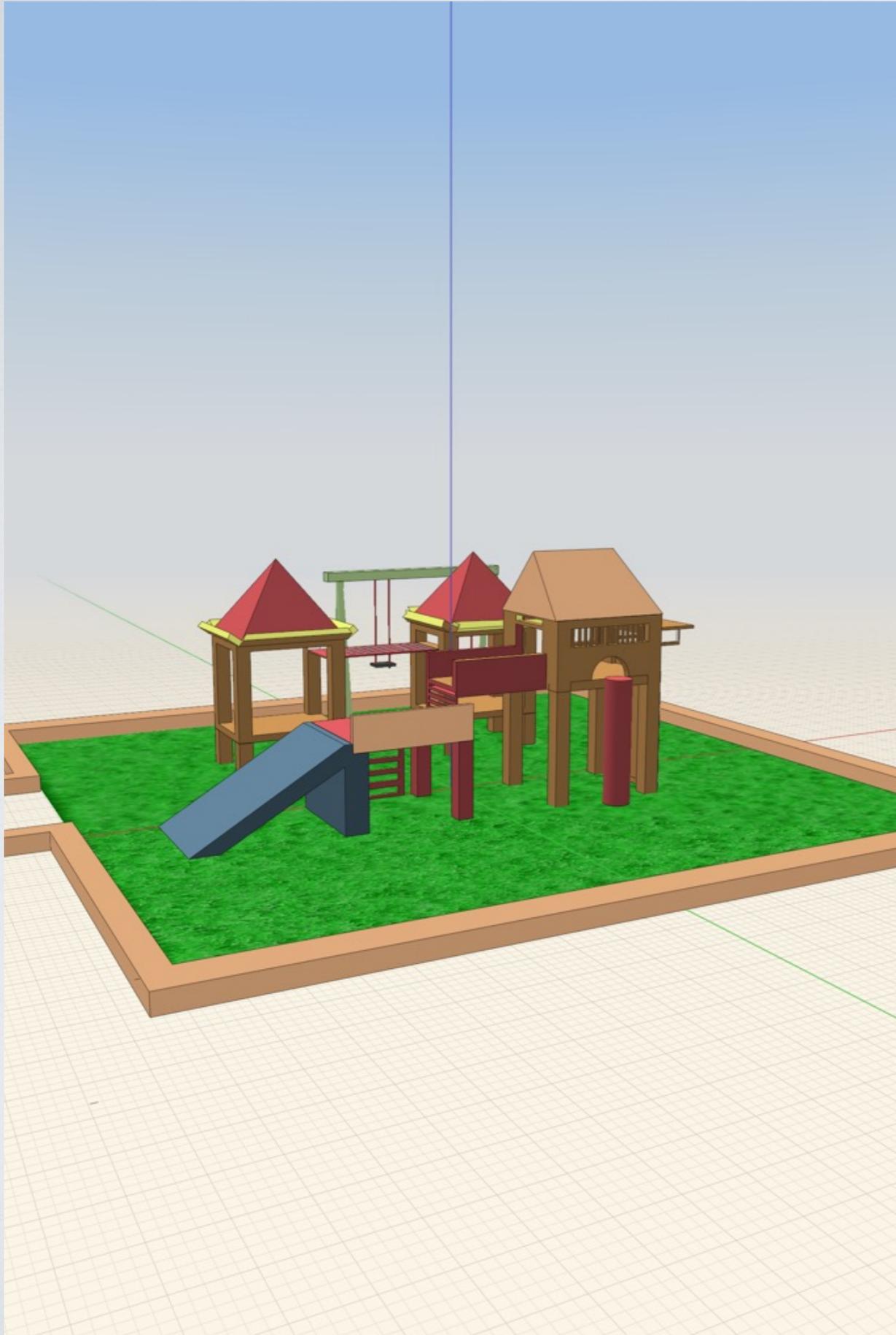
# EARTHQUAKE PROOFING

## 耐震

- The materials we used are all incredibly strong and durable. Our materials include things such as steel reinforced concrete, rubber tiles, steel bars, wood, plastic and so on.
- Due to the stilts being dug into the cement and encased, the playground should remain standing
- The playground Equipment is almost all interconnected, so the pieces of equipment can support each other

MODELS

モデル



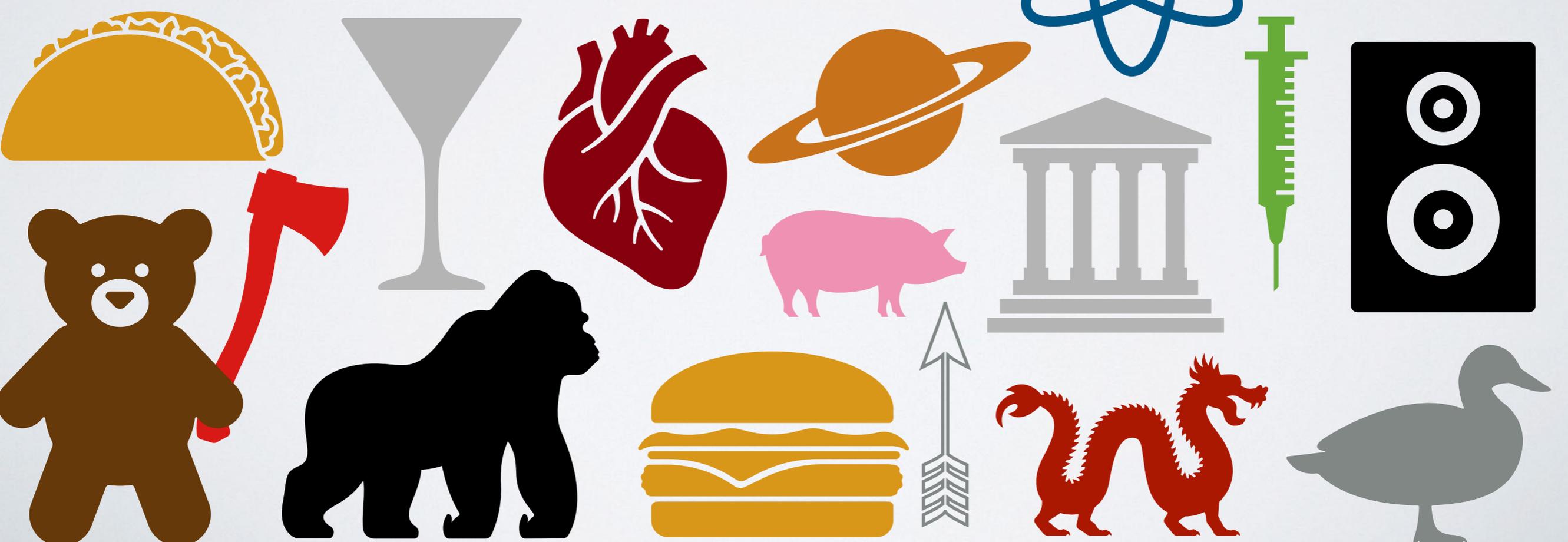


"地面が揺れるなら、逃げてください"

- いくつかのランディー -



THE END



QUESTIONS

質問