

SHAKE IT UP (LEVEL 2)

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| Description | Learners will begin to understand the way the Earth is designed as tectonic plates, how mountains form, what earthquakes are and how we respond to them! |
| Leading Question | Did you know the land we are standing on keeps moving? |
| /Total Time Required | 4 hours total over 5 days |
| Supplies Required | Pens – Paper, Orange Plastic covers of containers, A large tub Cardboard, Scissors, Styrofoam, Glue Preferred: A World Map |
| Learning Outcomes | <ul style="list-style-type: none"> • Tectonic plates and layers of the Earth • Movement of the tectonic plates • Formation of geographical features • Earthquake resistant structures |
| Required Previous Learning: | Basic knowledge on the world map |

DAY 1

Today you will learn about the earth!

| Suggested Duration | Activity and Description |
|---------------------------|--|
| 10 minutes | <ul style="list-style-type: none"> • Learners will reflect on how they think the Earth's surface and continents are formed. - Learners will understand that our Earth is made up of slowly moving pieces called plates that are floating on a hot liquid. Our homes and even our oceans are on top of these plates, which are on top of this hot liquid. |

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| | - These have moved over the millions of years to form the Earth with its continents, oceans, mountains and ridges as we know it today. |
| 10 minutes | <ul style="list-style-type: none"> Learners will take an orange that represents the Earth, they will tear pieces of the peel – each of the peel pieces represent one plate and the orange below represents the hot liquid underneath |
| 10 minutes | <ul style="list-style-type: none"> Learners will take a few small plastic covers (or any material that floats) and float this on a tub of water. The way these plastic covers move like the Earth's plates move but much more slowly |
| 10 minutes | <ul style="list-style-type: none"> Learners will reflect on the fact that the land they stand on is moving and how slowly it moves that they cannot feel it |

DAY 2

Today you will learn about how the earth can be like a puzzle.

| Suggested Duration | Activity and Description |
|---------------------------|--|
| 30 minutes | <ul style="list-style-type: none"> Learners will draw and design their own map of the Earth as a jigsaw puzzle with 8 pieces on Styrofoam or Cardboard (representing the 8 large plates). They will draw this based on the below or their own imagination of the various continents |
| 10 minutes | <ul style="list-style-type: none"> Learners will paint over their world map with blue representing the oceans and label the ones that they know |
| 10 minutes | <ul style="list-style-type: none"> Learners will depict the continents and land in green or a chosen colour and label the ones that they know. |

DAY 3

Today you will understand how earthquakes and mountains are formed.

| Suggested Duration | Activity and Description |
|---------------------------|---|
| 15 minutes | <ul style="list-style-type: none"> Learners will place their hands-on top of each other palms facing downwards. The palm of their upper hand should be touching the back of their other hand. They will now rub their hands in this position and notice how their left hand moves to the right and right |

hand moves to the left. This heat created when the hands rub represents the friction created when the pieces slide over each other. In most cases this creates an earthquake as the crust shakes

- Learners will be exploring how mountains are formed, which happens when two plates bump into each other

15 minutes

- Learners will hold up both their hands touching at the fingertips as shown in step 1. Each of their hands represents a different tectonic plate. Learners will then push their hands together from their wrists as shown in step 2 and observe how their fingers move upward to form a mountain as shown in step 3 (see images below for clarification). This is representative of two plates colliding with each other – this is how the Himalayas and other mountains were formed when plates crashed against each other

Step 1:



Step 2:



Step 3:



15 minutes

- Learners will try and draw the two types of movements and the geographical features that are created

DAY 4

Today you will create structures that are Earthquake resistant.

| Suggested Duration | Activity and Description |
|--------------------|---|
| 40 minutes | <ul style="list-style-type: none"> • Learners will try and create structures that are Earthquake resistant - Learners will use styrofoam (thermocool) as a base and construct a tower of any materials available at home such as paper or plastic cups - Learners will design two towers: <ul style="list-style-type: none"> - The first tower will be deeply embedded into the base and have a broader base. Learners can use toothpicks, pins etc. to secure the tower into the base. - The second tower will not be as embedded into the base and has a narrower base |
| 10 minutes | <ul style="list-style-type: none"> • Learners will try and shake the Styrofoam base to test which of the towers will not fall during an Earthquake. |
| 10 minutes | <ul style="list-style-type: none"> • Learners will reflect on what makes towers more resistant and write this down |

DAY 5

Today you will think of ways to react in an earthquake, and you will present your jigsaw puzzle to your family.

| Suggested Duration | Activity and Description |
|--------------------|---|
| 20 minutes | <ul style="list-style-type: none"> • Learners will begin to think about how they would react in their home if there is an Earthquake. What emergency response plan would they put into place. - Prompts: how would you ensure all the family members leave the home or stay safe? How can we ensure everyone leaves in an orderly fashion? Etc. |
| 10 minutes | <ul style="list-style-type: none"> • Learners will present their jigsaw puzzle and reflections with their family. |

ASSESSMENT CRITERIA

- Understanding of plates and movement
- Representation of how geographical features are.
- Designing maps and jigsaw puzzles.