Activity Title:

Meet the dunes

NOTE: these activities are designed for use before and after viewing 'Our sand dunes clip 1 – meet the dunes'

Focusing questions

Why are sand dunes important?

What is the relationship between dune plants and the sand dunes?

What do we already know about sand dunes?

Resources required

LESSON ONE: What do we know

- Sand
- Trays (tote trays or similar)
- Water
- Straws
- Beach story
- Circle Map activity page

LESSON TWO: Beach bottle

- Sand
- 1.5L clear plastic bottle
- Baby oil
- Blue food colouring
- Hot glue gun
- Small shells
- Silver glitter

LESSON 3: Meet the dunes

- Our sand dunes clip 1 – meet the dunes
- Word cards

See also **Planner: Life's a Beach – Our sand dunes clip 1 – Meet the dunes** (final page)

Prior learning

None needed but the following could work well:

- 1b Beach brainstorm
- 1c Beach diagram

Method

LESSON ONE: WHAT DO WE KNOW

1. Choose a story to read about the beach. Discuss our local beach. Make a list of all the things we do at our beach on A3 white paper. Teacher to record for wall display.
2. Hook students into 'Life's a Beach' by creating a tactile display in classroom. Collect items such as driftwood, pīngao, shells, sand, to display. Collect a selection of 'Kiwiana' books, songs, poems, photos and diagrams. Ensure there is paper for students to record their 'wonderings', prior knowledge and connections as they interact with the display.

ACTIVITY
1g

Activity Title:
Meet the dunes

Environmental Education Aspect:
About the environment

Environmental Education Concept:
- Interdependence
- Sustainability

Curriculum Links:
- Science

Science Levels 1 & 2:
PHYSICAL WORLD
- Explore everyday examples of physical phenomena, such as movement, forces, electricity and magnetism, light, sound, waves, and heat.
- Seek and describe simple patterns in physical phenomena.

Science Levels 3 & 4:
PHYSICAL WORLD
- Explore, describe, and represent patterns and trends for everyday examples of physical phenomena, such as movement, forces, electricity and magnetism, light, sound, waves, and heat. For example, identify and describe the effect of forces (contact and non-contact) on the motion of objects; identify and describe everyday examples of sources of energy, forms of energy, and energy transformations.

Suggested Curriculum Level:
Level 1 – 4

3. HIKOI – Organise a walk to your local beach.
4. Complete 1e Beach Sketch, use existing template.
5. Group students into 3-4 groups. Give them the ‘Circle map’ activity page. Have students fill in the first ring with any prior knowledge they have about our dunes.
6. Possible questions for teacher to prompt:
    - How are dunes formed?
    - What are dunes – what is their job?
    - Who looks after the dunes?
7. Students to record responses on sheet as a group to share during whole class discussion.
8. Whole class discussion – teacher to record responses for wall display.

LESSON TWO: BEACH BOTTLE

1. Recap of learning from ‘Lesson One: What do we know’.
2. Introduce Beach bottle activity.
3. Students break into same groups and work together to make their own Beach Bottle. Give groups Beach bottle activity page.
4. Share Beach Bottles – teacher to prompt discussions with questions. Link back to our sand dunes. Teacher to record students responses on A3 paper for wall display.

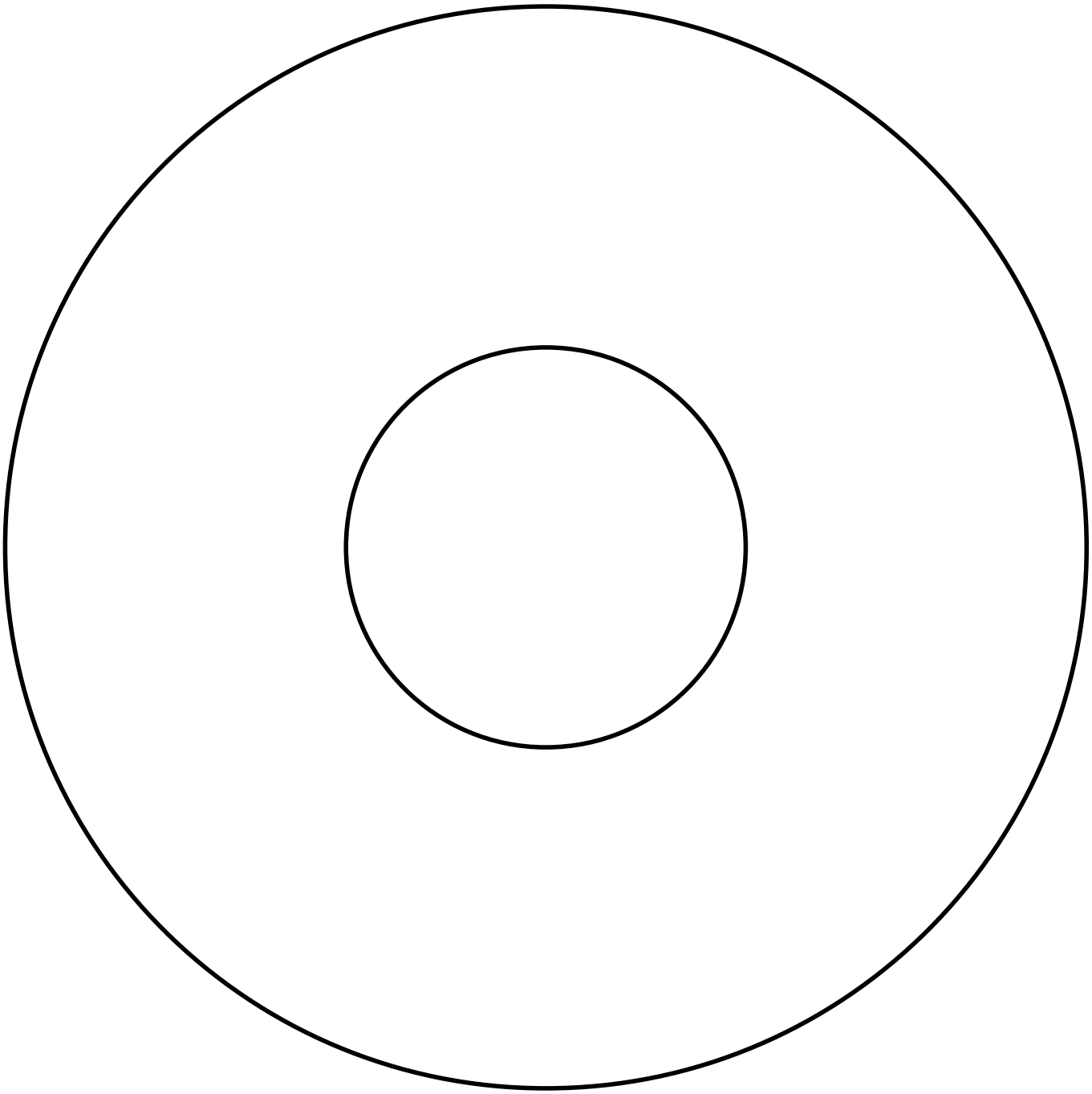
LESSON THREE: MEET THE DUNES

1. Watch the first Coast Care video: Our sand dunes clip 1: Meet the dunes.
2. Revisit the circle map and add in all post film clip knowledge.
3. Conduct the new words matching activity (cut up the page so the words and definitions are separated. Have students match the correct word to the correct definition.
4. Discuss some of the good and not so good things people do on beaches and link back to dune conservation.
5. Conduct some of the possible next steps (below).

Possible next steps

- Revisit 1e Beach sketch. Students to add in any new words or knowledge after viewing ‘Our sand dunes clip 1 – Meet the dunes’
- Explain how the dunes are formed using ‘Explain Everything’ App
- Create a KAHOOTZ quiz all about film clip 1. Students to pair up and test each other’s knowledge.
- Activity 3a New Zealand beach use – Compare and contrast a beach with human development and a beach without human development (use Venn diagram template 3a).
- Activity 3b Parts of the beach and human activity
- Activity 2a Native dune plants – what lives where and why?
- Activity 2g Dune wildlife field trip
- Activity 2l (i) and (ii) Coasties dune community bingo – native plants and animals
- Activity 2m Which zone – who can be found where?

Circle map



Sand trays

What does the sand feel like?

What happens when you blow gently through a straw?

What happens when you add water?

Try making a sand dune…

Beach bottle

1. Get your clean bottle and pour in ¼ cup of sand

2. Add in 10 small shells

3. Mix a few drops of green and blue food colouring into 6 cups of water

4. Fill your bottle half way up

5. Add a pinch of glitter

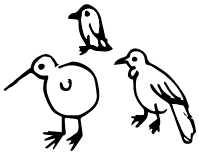
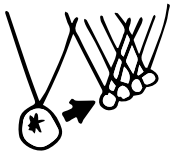
6. Fill up the rest of your bottle with baby oil. Make sure you fill it right to the top – we don't want any air in it!

7. Now run the hot glue gun inside the lid of your bottle. Quickly screw your lid on tight!

8. Give your Beach bottle a shake.

9. Tell a buddy what you can see!

Word cards:
Our sand dunes clip 1 – Meet the dunes

 **Buffer**	Protective barrier that softens the impact of something	**Native to Aotearoa New Zealand**	Naturally found in Aotearoa New Zealand
 **Generations**	All people born and living at about the same time	 **Species**	A group of plant and animals that have similar characteristics
 **He mahi pai ō ngā tangata katoa!**	Together we can help with this important work!	 **Tāwhiri-mātea**	The wind
 **Impact**	The effect something has on something else	 **Te ara tika**	Sign posted pathways
 **Kai moana**	Seafood or shellfish	 **Te Moana -A-Toi**	The Bay of Plenty
 **Moana**	The sea or ocean	 **Whenua**	The land

Planner: Life's a Beach - Our sand dunes clip 1 - Meet the dunes

New Zealand Curriculum Levels: 1-4 (Primary Years 1-8)

SOCIAL SCIENCES:

Level 1: Understand how places in New Zealand are significant for individuals and groups
Level 2: Understand how places influence people and people influence places
Level 3: Understand how people view and use places differently
Level 4: Understand how exploration and innovation create opportunities and challenges for people, places, and environments.

SCIENCE:

Levels 1 & 2:
PHYSICAL WORLD: Explore everyday examples of physical phenomena, such as movement, forces, electricity and magnetism, light, sound, waves, and heat.

PHYSICAL WORLD: Seek and describe simple patterns in physical phenomena.

Levels 3 & 4: PHYSICAL WORLD: Explore, describe, and represent patterns and trends for everyday examples of physical phenomena, such as movement, forces, electricity and magnetism, light, sound, waves, and heat. For example, identify and describe the effect of forces (contact and non-contact) on the motion of objects; identify and describe everyday examples of sources of energy, forms of energy, and energy transformations.

This resource can also be used to support the teaching of Achievement Objectives in:
- Te Reo Māori
- The Arts
- English

Overall Objectives:

TO INVESTIGATE:
- The nature and uses of beaches
- The community of plants and animals that exist in the sand dunes
- The impact of humans on the beach
- Dune formation and function using dune profiles
- Dune protection and enhancement methods
- Coastal management and action that can be taken to protect the dunes.

THE RESOURCE ALSO AIMS TO DEVELOP:
- Awareness and sensitivity to the environment and the diversity of the beach and sand dune environment.
- Knowledge and understanding of kaitiakitanga responsibilities of our environment and what is impacting on the dunes.
- Attitudes and values that reflect feelings that recognise beaches and sand dunes as a taonga and of concern for our environment and communities.
- Skills involved in identifying, investigating and problem solving issues related to the beach and dunes.
- A sense of responsibility through participation and action as individuals and as members of a group in addressing some of the issues associated with beach and dune protection and enhancement.

Possible wonderings:

- How can I make people more aware of the importance of our dunes?
- Why do we need dunes, how do they help us?
- When I'm at the beach, do my whānau and I respect the dunes?
- What could I do if I see people disrespecting our dunes?
- What if we planted more plants on the dunes?

Possible actions:

- THINK about how you can spread the word about the importance of our dunes
- SHARE your new knowledge with your whānau at home
- MAKE a poster/i movie/game/presentation informing an audience about how we can reduce human impact on the dunes
- DO an act of service to help protect our dunes

Learning experiences overview

BEFORE WATCHING CLIP:
- Hook students into 'Life's a Beach' by creating a tactile display in classroom. Collect items such as driftwood, pīngao, shells, sand, to display. Collect a selection of 'Kiwiana' books, songs, poems, photos and diagrams. Ensure there is paper for students to record their 'wonderings', prior knowledge and connections as they interact with the display.
- HIKOI – Organise a walk to your local beach.
- Beach sketch. Use the template provided in activity 1e of this resource.
- CIRCLE MAP – Students to fill in first ring with any prior knowledge they have about our dunes. Possible questions for teacher to prompt:
  1. How are dunes formed?
  2. What are dunes – what is their job?
  3. Who looks after the dunes?
- SAND TRAYS and BEACH BOTTLES

AFTER WATCHING CLIP:
- BEACH SKETCH – Revisit sketch. Students to add in any new words or knowledge after viewing film clip #1
- Complete the activity from this resource 3a, compare and contrast a beach with human development and a beach without human development (use Venn Diagram template in activity 3a)
- Explain how the dunes are formed using 'Explain Everything' App
- Create a KAHOOTZ quiz all about Clip #1 – students to pair up and test each other's knowledge
- Revisit the CIRCLE MAP and add in all post knowledge.
- Complete other activities from this resource: 1c Vocab matching activity; 3b Parts of the beach and human activity

USEFUL WEBSITE: Beach basics at http://coastalcare.org/educate/beach-basics/