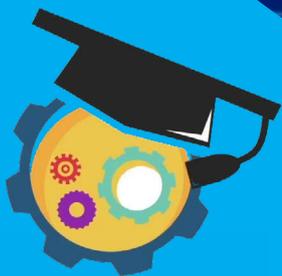


Activity Cards



N*GEN
NEXT GENERATION

Activity Cards

About these Activity Cards

There are 13 activity cards, each with a fun engaging activity you can do with children aged 7-11.

Time 1 hour per activity

Materials

A list of material required can be found on the left of each activity. There is also an 'Alternatives' box which gives ideas on how to run the activity if materials are not available.

Vocabulary

Learn the main words used in the activities in the vocabulary section!

Learning points

The main learning points can be found in this section. Use this to review the activity with students and see what they have understood.

Cross-curricular Links

Subjects related to the activity are noted here.

Life-skills

Life-skills which children will learn during this activity are noted here.

Watch the full

 **activity episodes**

youtube.com/ngentvafrica

Activity 1: Bees

Make a bee out of junk to learn the body parts of insects!

Activity 2: Water Cycle

Simulate a water cycle in your home with a plastic bag filled with water.

Activity 3: Senses

Experience all the senses with five mini activities

Activity 4: Mountains

Make a volcano and eruption with paper mache, bicarbonate of soda and vinegar!

Activity 5: Sound

Make home made telephones with cups and string.

Activity 6: Energy

Construct a paper windmill.

Activity 7: Light

Make your own shadow puppets and put on a play!

Activity 8: Bones and Fossils

Make modern day fossils with clay and dough.

Activity 9: Brain

Make brain hats to consolidate knowledge of the brain

Activity 10: Robots

Design a robot to solve a real world problem

Activity 11: Wetlands

Construct an eco system and observe over time.

Activity 12: Space

Design and make a constellation

Activity 13: Food

Simulate digestion using a clear plastic bag, soda and food.



bees



Make a bee out of junk!

Overview

Use junk materials to build a model of a bee or another insect.

Part 1

Introduce insect anatomy and key vocabulary.

Sing the insect song from the N*Gen Bees video

♪ **Head, thorax, abdomen, abdomen!**
Head, thorax, abdomen, abdomen!
and wings and legs antennae too!
Head, thorax, abdomen, abdomen! ♪

Part 2

Collectively, make a list of all known insects. You could make a separate list of non-insect suggestions to introduce the idea of categories and sorting.

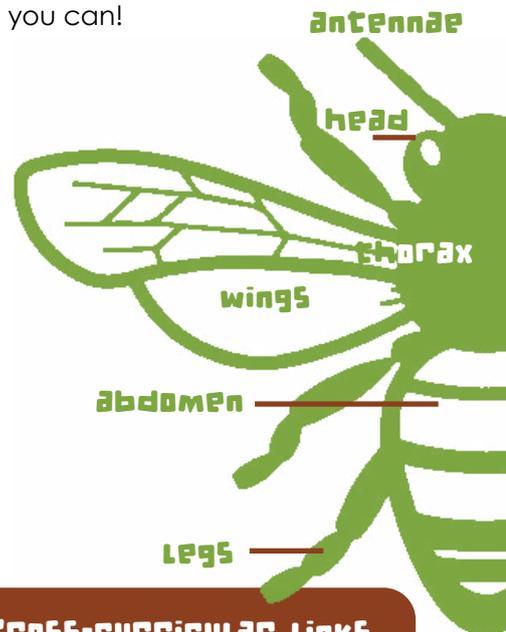
Part 3

Use junk - cartons, cardboard, cans, boxes, wire, wood, plastic etc to construct a model insect, clearly showing the features of an insect - head, thorax and abdomen, two pairs of wings and

a pair of antennae. Ideas for joining: tape/glue/string /wire. Encourage children to go big or small with their creations!

Part 4

Introduce your insect to a partner, show them its different features. Use as much scientific language as you can!



CROSS-CURRICULAR LINKS
Design/technology, Maths.

LIFE-SKILLS
Decision-making, effective communication

Alternatives - instead of joining items together to make a model, the loose parts could be placed side-by-side to represent an insect, which could then be deconstructed and the materials used again.



N*GEN
NEXT GENERATION

Activity Card

About this activity

In this activity you're going to make a bee or other insect and learn about the parts of an insect!

Time 1 hour

Materials

- ✓ junk ✓ packaging ✓ string
- ✓ tape ✓ glue ✓ scissors
- ✓ wire ✓ pen and paper

Alternatively: draw with a stick on the ground

Keywords:

insect, exoskeleton, head, thorax, wings, abdomen, antennae

Learning points

- An insect is an animal with a hard covering called an exoskeleton
- Insects have 3 body divisions - head, thorax and abdomen, and most have two pairs of wings and a pair of antennae
- Bees have stings on their abdomen

Watch the full

bees episode!

youtube.com/ngentv africa



Water

Make a water cycle in a bag!

Part 1 - 15 minutes

Ask:

Where do we find water on Earth? Why is water important? Where does it come from? Share ideas and introduce key vocabulary. Draw a large diagram of the water cycle where all the children can see it and encourage them to learn the key stages of the cycle. As a group, you could invent actions to represent each stage, and repeat the cycle several times using these movements.

Part 2 - 30 minutes

Show the children how to make a water cycle in a bag, by drawing a diagram on the bag, including the sun, clouds, rain and surface water, and arrows to show the movement of the water. Children could practise on paper first, and if resources are limited, they could work in pairs or small groups. Once the bags are decorated with water cycle diagrams, add

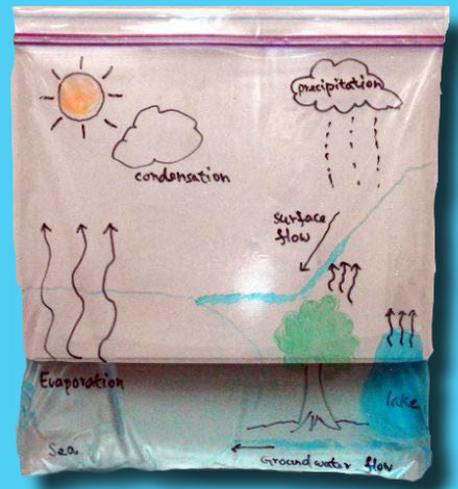


Image credit: rookieparenting.com.

about 1/4 cup water to each bag, seal them carefully and tape to a window in direct sunlight.

Part 3 - Spread over the next few days, 5 minutes each day

Return to the bags over the next few days to observe the mini water cycles taking place. Encourage and reinforce scientific vocabulary.

About this activity

In this activity you're going to learn about the water cycle

Time 1 hour

Materials

- ✓ Sealable clear plastic bag / bottle
- ✓ Pen / felt-tip
- ✓ Blue food colouring (not essential but helpful if available)
- ✓ Paper and pencil
- ✓ Tape
- ✓ Window in sunlight

Keywords:

water cycle, dehydration, freshwater, saltwater, ocean, river, lake, evaporation, water vapour, liquid, gas, condensation, precipitation, atmosphere

Cross-curricular links -

art, maths

Life-skills

enquiry, observation

Alternatives

You could use a clear bottle instead

Watch the FULL water episode!



youtube.com/ngentvafrica

Learning points

- the water we use now has been in circulation for millions of years
- water is essential for life on Earth - in fact humans are 60% water
- It is important to drink plenty of water
- Water is made from molecules
 - two hydrogen atoms for each oxygen atom - H₂O
- Clouds are formed as large bodies of water evaporate. Evaporation is water turning into a gas called water vapour. This rises and in a cold area, it condenses
 - turns into a liquid again
- The Water Cycle:
 - evaporation - condensation
 - precipitation - collection





N*GEN
NEXT GENERATION

Activity Card

About this activity

In this activity you're going to learn about the 5 senses.

Time 1 hour

Materials

- ✓ Small household items
- ✓ fruit / veg with different shapes and textures
- ✓ Instrument / pan and stick
- ✓ Blindfold / scarf / hide eyes under t-shirt
- ✓ Small quantity of items with a distinct smell - fruit / herbs/ spices / flowers...
- ✓ Sweet / small chunk of fruit

Keywords:

**Senses touch smell
sound taste see**

Learning points

- Our five senses are sight, sound, taste, smell and touch - each sense has its own organ
- Senses help us to identify what in our environment is useful or unsafe - they help us without us thinking about it, these automatic reactions are called reflexes
- Our senses can work together, eg smell and taste
- When one sense is missing, others can become more heightened.

Senses activity

Overview

Five mini experiments using the senses

Part 1

Five senses meditation - pause and notice **five** things that are interesting about your visual environment.

After this, close your eyes, then notice **four** sounds, **three** physical sensations, **two** smells and **one** taste.

Ask - did you notice anything usual?

Part 2

Sight - in partners, take it in turns to cover your eyes with your hands and count to 30. When you take your hands away, what does your partner notice? Look closely at each other's pupils.

Touch - take it in turns to identify objects that are hidden in a bag by reaching in with your hand.

Sound - one child is blindfolded, another walks around them with an instrument / object that makes a noise. Can the blindfolded child point in the direction of the sound?

Guess the smell - place a few items in small containers - herbs, spices, fruit.

Sweet on tongue

*this would work well in small groups, as a carousel if there were enough adults to support.

Part 3

Come back together.

Ask

- what did you notice?
 - which do you think is the most important sense? Why?
- Share ideas as a group.



Life-skills - inquiry,
cooperation

**Watch the FULL
Senses episode**



youtube.com/ngentvafrica



N*GEN
NEXT GENERATION

Activity Card



Mountains Activity

Overview

Use paper mache to form a volcano around a plastic bottle and mimic an eruption using bicarbonate of soda and vinegar.

Part 1 - 15 minutes

Introduce children to different kinds of mountain (fold / block / dome) and how they are formed.

Q - can you think of a mountain? What type of mountain do you think it is? Can you explain how it could have been formed?

Reinforce scientific language.

Explain how volcanoes function.

Part 2 - 30 minutes

Model how to form structures using paper mache. Show the children how to construct a volcano shape around a plastic bottle.

Allow children time to make their own volcano models - this would work well in pairs or small groups as the structure needs many layers of paper. The children could mix their own paste and rip strips of paper in preparation. Tape could help but is not essential.

Allow the structures to dry - they could also be painted as an additional, optional step, allowing for further drying time.

Part 3 - Next day - 15 minutes

To cause the eruption, add bicarbonate of soda to the bottle, followed by vinegar (about 1 part bicarb: 2 parts vinegar, depending on the quantity you have) Revisit the concept of volcanoes and remind each other how they are formed and what causes volcanoes to erupt, reinforcing scientific vocabulary.

About this activity

In this activity you're going to learn about mountains and volcanoes.

Time 1 hour

Materials

- ✓ Paper strips
- ✓ Paper mache paste (this could be watered down PVA glue/ or a flour and water mix, 1 part flour:2 parts water)
- ✓ Tape (optional) ✓ Vinegar
- ✓ Plastic bottle ✓ Paint (optional)
- ✓ Bicarbonate of soda

Vocabulary

- ✓ **fold mountain**
- ✓ **eruption**
- ✓ **block mountain**
- ✓ **inner core**
- ✓ **dome mountain**
- ✓ **outer core**
- ✓ **mantle**
- ✓ **crust**
- ✓ **volcano**
- ✓ **sulphur**
- ✓ **magma**
- ✓ **tectonic plates**
- ✓ **lava**

Learning points

- Mountains are made of the Earth's crust (outer layer), below the crust are the mantle, outer core and inner core
- The earth's crust is broken into tectonic plates, which are huge, heavy and constantly moving very slowly
- These small movements cause big changes over millions of years, for example, a mountain is formed by two tectonic plates pushing together
- There are fold mountains (eg Atlas Mountains), block mountains (eg Rwenzori Mountains) and dome mountains (eg Kilimanjaro)
- Volcanoes are dome mountains, containing magma (formed in the mantle). Movement of tectonic plates can cause pressure in the mantle, causing magma to rise up and lava to burst out.

Alternatives

If resources are limited, you could demonstrate a single eruption, in a circle so that everybody can see.

Cross-curricular links

art

Life-skills

cooperation, observation



Volcano



Watch the Full
Mountains



episode

youtube.com/ngentvafrica



N*GEN
NEXT GENERATION

Activity Card

Sound Activity



Part 1 - 15 minutes

Ask:

Can you think of some sounds that you have heard today? It might help to close your eyes...

Explain that even though these sounds are very different, there is something that they have in common - vibrations!

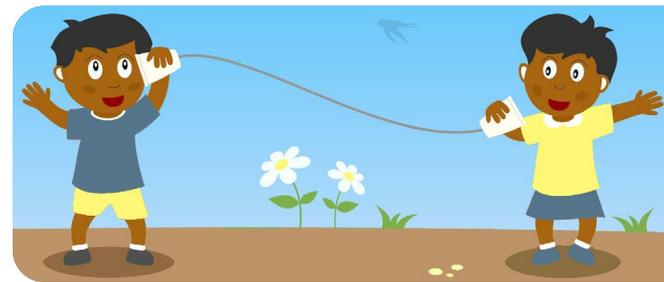
Demonstrate the concept of vibration by placing a few grains of rice on the surface of a drum - encourage the children to watch what happens as you tap the drum lightly - they could take it in turns to have a go, too, noticing as the grains are propelled into the air.

Explain; when a sound is made it vibrates the air molecules close by - we can't see this - this becomes a soundwave as the molecules continue to bump into their neighbours - if the soundwave reaches our eardrum, that vibrates too, telling our brain, which we experience as sound. To illustrate molecules bumping into each other, you could do a Mexican wave, as a group!

Part 2 - 30 minutes

Show the group how to make and use a paper cup phone and provide them with materials to construct their own, in pairs. Show how to punch a hole in the bottom of the cups with a pencil, then thread your string from the bottom to the inside of the cup. Tie a knot on the inside of the cups. They could explore and record how the paper cup phone works with different variables, eg:

- length of string
 - how taut the string is
 - what kind of sound is being made - whisper / song / high and low pitch
- The children in pairs could transcribe messages given and check to see if they heard them correctly.



Part 3 - 15 minutes

Gather the children back together to share their findings. As the pairs share what they noticed, relate this to the science of sound, reinforcing scientific language.

They may have noticed: that

- the phone works best when string is taut
- a shorter string carries sounds more effectively
- sounds that start loudly are more likely to be received
- these different variables interact

About this activity

In this activity you're going to learn about sound.

Time 1 hour

Materials

- ✓ Drum
- ✓ Rice
- ✓ Paper cups
- ✓ string / wool
- ✓ Pencil + plasticine to make hole
- ✓ Paper

Keywords:

Vibrations pitch
Sound waves volume
Molecules eardrum

Learning points

- Sound travels in soundwaves
- As a soundwave travels, the vibrations decrease as they get further away - this is how we experience volume
- Soundwaves travel more slowly than lightwaves
- Pitch is the quality of sound - high and low, which gives us music

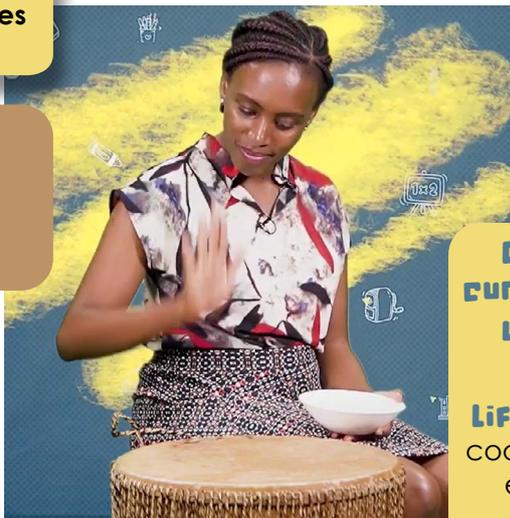
Alternatives

different containers could be used - this could even form part of an experiment

Watch the full Sound episode!



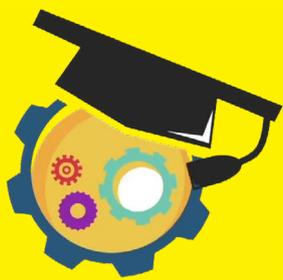
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Cross-Curricular Links -
music

Life-Skills
cooperation, enquiry





N*GEN

NEXT GENERATION

Activity Card

Energy Activity

Overview

Construct a paper windmill.

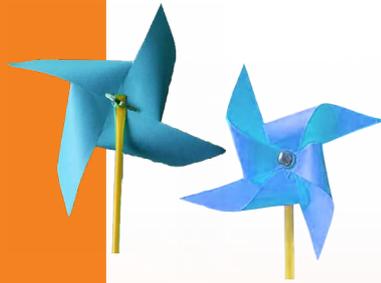
Part 1- 15 minutes

Ask: What is energy? Collect ideas and introduce the different forms that energy can take; heat, motion, light, electrical and chemical. Challenge the children to think of examples of each.

Introduce the idea that energy is transformed from one state to another - eg solar panels transfer light energy to electrical energy. Demonstrate rubbing a balloon on your hair then placing above a scrap of paper. Notice the paper moving - you have turned motion energy into electrical energy. This could be fun for the children to try, too!

Part 2- 30 minutes

Introduce the concept that some types of energy can cause pollution. However, there are renewable sources, including solar, hydroelectric and wind energy. Making paper windmills - starting with a square of paper fold and unfold corner to corner to make creases in an X shape. Cut from the four corners along the folds about 2/3 of the way to the centre. Bend 4 corners into the middle and secure with a split-pin. Attach to a straw.



Part 3- 15 minutes

Encourage the children to find ways to make their paper windmill spin. Can they use it to move something? Reinforce scientific vocabulary.

About this activity

In this activity you're going to learn about energy.

Time 1 hour

Materials

- ✓ Balloon
- ✓ Paper
- ✓ Split-pin
- ✓ Scissors
- ✓ Straw

Vocabulary

Energy heat motion light electrical chemical oxidisation renewable pollution

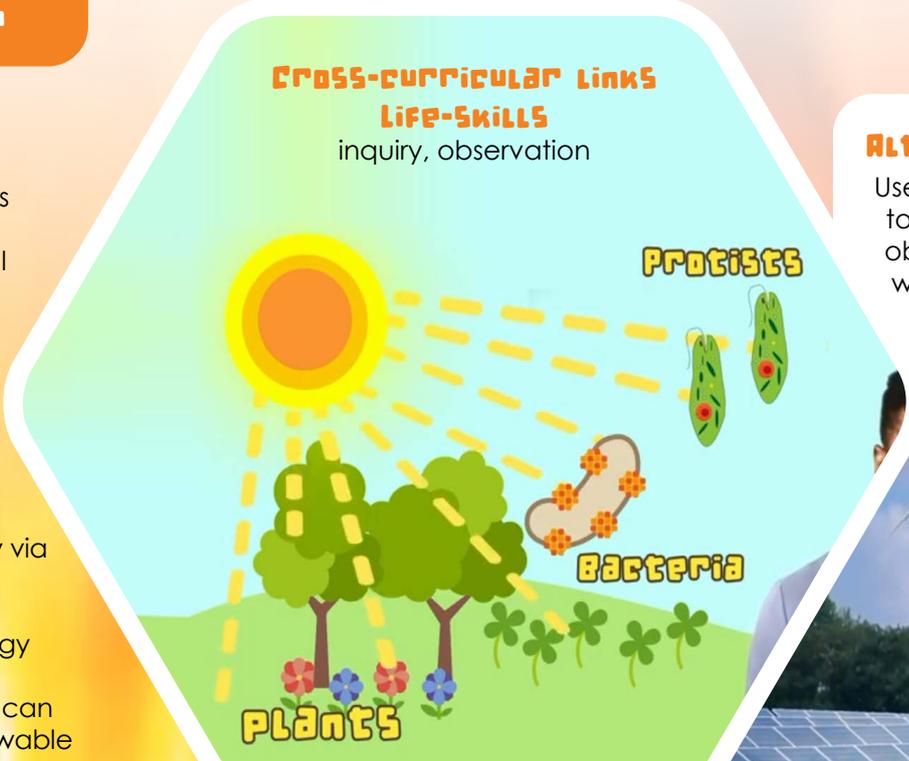
Learning points

- There are several forms of energy: heat, motion, light, electrical and chemical.
- Energy makes things happen.
- Energy isn't created or destroyed; instead it transforms from one state to another.
- The food we eat is converted into energy via a process called oxidisation.
- The sun is a huge energy source.
- Some types of energy can cause pollution - renewable energy is a solution.

Cross-curricular Links

Life-Skills

inquiry, observation



Alternatives

Use your breath to move small objects - this is wind energy!



Watch the full



Energy
episode

youtube.com/ngentv africa

MOTION ENERGY

ELECTRICAL ENERGY

MOTION ENERGY



Light

Make a shadow puppet!



N*GEN
NEXT GENERATION

Activity Card

About this activity

In this activity you're going to be making a shadow puppet and learning about light!

Time 1 hour

Materials

- ✓ card
- ✓ sticks
- ✓ string
- ✓ tape
- ✓ torches
- ✓ scissors
- ✓ translucent material (tissue paper, acetate)

Alternatively: hands, sunlight, pale blank wall

Keywords:

**Shadow Light wave
opaque Sun**

Learning points

- The sun is our main light source
- Light travels in straight lines
- Light waves cannot travel through solid / opaque objects, and so shadows are created
- Shadows vary in appearance depending on the nature of the light source

Overview

Cut puppet characters from cardboard and fix them to sticks or string. Place the puppets between a light source (torch or sunlight) and a pale, blank wall to create shadows. Explore how the shadows change as you manipulate the puppets and move them closer to and further away from the light source.

Part 1

Turn off the lights / ask children to close their eyes.

Ask:

- What is missing? light!
- What is light?
- Where does it come from?
- What does light help us to do?
- What is our biggest source of light?
- What do we want to learn about light?

Model learning points using hands / example puppet, using scientific vocabulary. If using craft materials, model some ways to join pieces together. Ask children what character they plan to make, share a few ideas as a group.

Alternatives - Use your hands instead!

Part 2

Make puppets! Support the children as they come up with ideas for characters - real or imagined! Draw the characters on the card, then cut out. Using tape attach the character to the sticks or string.

Part 3

Play with shadow puppets / explore using their hands as puppets with a light source. Working in small groups could facilitate this experimentation. Encourage children to move their puppet in relation to the light source, and to twist and turn their puppet / hands, observing cause and effect. Encourage use of scientific vocabulary.

Part 4

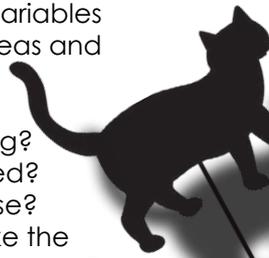
Gather the group back together. Encourage a few children in turn to demonstrate their shadow puppet working. Alter some variables to consolidate key ideas and vocabulary.

Ask:

- What is happening?
- What has changed?
- Why is this the case?
- How can we make the shadow bigger / smaller?
- How can we make the shadow disappear?

Cross-curricular links

Literacy and storytelling - this could be delivered as part of a scheme of work in which children write a story/play and perform it using their puppets.



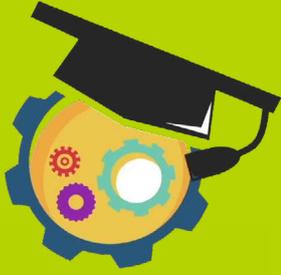
**Watch the full
Light episode!**



youtube.com/ngentvafrica



Bones and FOSSILS activity



N*GEN
NEXT GENERATION

Activity Card

About this activity

In this activity you're going to learn about bones and fossils

Time 1 hour

Materials

- ✓ Fossil / picture of fossil
- ✓ Clay / salt dough
- ✓ Selection of textured objects - stones, seeds, shells, leaves, branches, small toys.

Keywords:

body fossils evolution
 trace fossils ancestry
 palaeontologists
 minerals

Overview

Press objects into clay or dough and take them out to see the imprint left.

Part 1 - 10 minutes

Show fossil / picture of fossil - explain the difference between body fossils and trace fossils, and how each are formed. Explain that fossils can show us the shapes and features of animals that lived at that millions of years ago.

Ask:

- If you were a palaeontologist, what kind of fossil would you like to find?
- What do you think it would tell you?

Part 2 - 30 minutes

Model how trace fossils are made by imprinting objects into clay/ dough.

Allow children to explore making imprints in small chunks of clay/ dough.

If there is enough clay/dough, the children could save each one to display. If materials are limited, they could keep reusing the same piece of clay/dough.

Part 3 - 20 minutes

Remember that fossils can help us to tell stories about the past. In small groups, show your favourite imprint. Can the other members of the group identify which object left the trace? Take it in turns.

Make your own FOSSIL dough:

- 1 cup of flour
- 1 cup of sand or dirt
- 1/2 cut salt
- 1/2 cup water
- a mixing bowl
- small objects to imprint



Cross-curricular Links -

Art

Life-Skills

Sharing, observation



Alternatives

If clay / dough is not available, children could imprint objects in soft, damp ground.

Learning points

- Fossils can tell us about life on Earth millions of years ago
- Bones can be preserved in the ground for millions of years under certain conditions - as the soft parts of the body decay, they are replaced by minerals that harden around the bones, creating body fossils, which show us the shapes and features of animals that lived at that time
- We can also find trace fossils, for example footprints, or poo!
- People who study fossils as their job are called palaeontologists
- Fossil records show us that human beings evolved in Africa.

Watch the FULL
Bones and Fossils episode!



[youtube.com/ngentvafrica](https://www.youtube.com/ngentvafrica)





Brain Activity

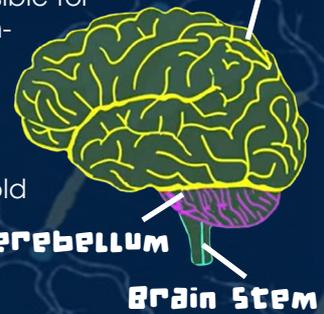


Overview

Make brain hats to consolidate knowledge of the brain.

Part 1- 20 minutes

Ask: How do our brains help us? Share ideas and introduce the three major parts of the brain. Encourage the children to touch the part of their **Cerebrum** head that corresponds. Explain what each part is responsible for (cerebellum- balance, regulating movements; brain stem- connects to spinal chord, main pathway from brain to body; cerebrum- thinking, voluntary muscles) and challenge children to think of examples. Explain that the cerebrum is split into right and left hemispheres. Simulate how neuronal pathways function by asking children to hold hands in a long line and passing a message or instruction from one end to the other.

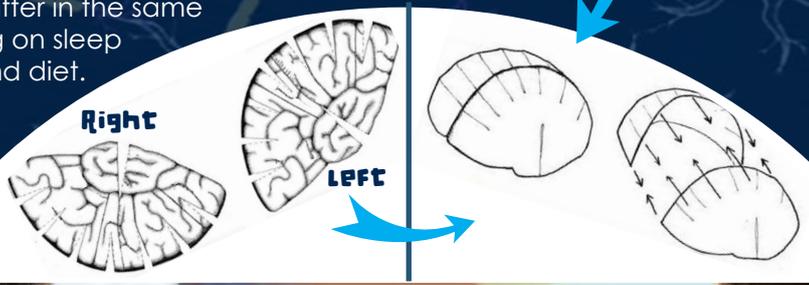


Part 2- 30 minutes

Ask the children to think of one activity that they have done today - can they explain which part(s) of their brain they used? Draw and label a big diagram of the brain where everyone can see it. Reinforce scientific vocabulary. Show the children how to make a brain hat by drawing two matching semi-circles, cutting out and sticking the curved sides together. Draw lines to mark out the three major parts (this can be done on each side, as a mirror image). Label the sections. This could be extended by adding other sub-sections of the brain to create a more detailed diagram. Have some fun wearing the hats!

Part 3- 10 minutes

Ask: What do we do to keep our bodies healthy? Collect ideas and explain that the brain needs looking after in the same way, focusing on sleep exercise and diet.



Cross-Curricular Links
Life-Skills
Self-awareness, mobility and orientation

About this activity

In this activity you're going to learn about the brain.

Time 1 hour

Materials

- ✓ Paper
- ✓ Tape ✓ Scissors
- ✓ Coloured pens or pencils

Vocabulary

**brain skull cerebellum
brain stem cerebrum
neurons hemisphere
neuronal pathways**

Learning points

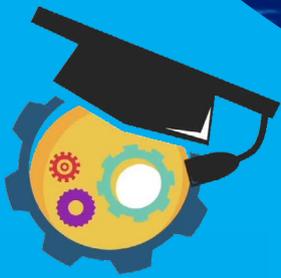
- The brain controls and regulates everything we do and think, and how we move and feel.
- The brain receives signals from the outside world via our senses, and sends signals to different areas of the body to help us respond.
- The brain has three major parts; cerebellum, brain stem and cerebrum.
- The cerebrum is split into two parts - left and right. The right hemisphere of the brain is more creative and controls the left side of the body; the left hemisphere is more logical and controls the right side of the body.
- When we are learning, neurons are connecting and carrying messages - when we learn something new, new connections are made; when we practise, the pathways are strengthened and it becomes easier to remember, and can become automatic - eg riding a bike.
- Sleep helps the brain to repair and organise new information. Physical exercise and a balanced diet helps the brain to work well, too!

Watch the full **Brain** episode



youtube.com/ngentvafrica

Robots Activity



N*GEN
NEXT GENERATION

Activity Card

About this activity

In this activity you're going to learn about robots.

Time 1 hour

Materials

- ✓ Pen / pencil and paper
- ✓ Tac / tape (not essential - wall gallery could be a floor gallery)

Vocabulary

- ✓ robots
- ✓ machines
- ✓ programming
- ✓ mechanics
- ✓ electronics
- ✓ sensors
- ✓ software

Learning points

- robots can perform tasks that humans don't want to do or can't do - e.g., going far underwater / into space / inside the human body
- all parts of a robot can be grouped into 3 categories; mechanics, electronics, software and use programming, and coding.

Cross-curricular links

design technology, literacy

Life-skills

creative thinking,
decision-making

Overview

Design a robot to solve a real world problem.

Part 1-15 minutes

Ask: What is a robot?

Can you think of any examples from real life or the movies? Explain that robots can perform tasks that humans don't want to do or can't do - e.g., going far underwater / into space / inside the human body, and that all parts of a robot can be grouped into 3 categories; mechanics, electronics, software.

Introduce the concept of programming. This could be demonstrated by blindfolding one child and giving them a sequence of instructions to navigate a short obstacle course. The children could repeat this in pairs*.

Part 2-20 minutes

Encourage the children to think about real-world problems (large or small) that need solving. Collect ideas and reflect on how solving these problems could positively impact our lived experience and environment.

Challenge the children to design a robot that could solve one of these problems, drawing their robot on paper. They could think about what materials would be used, how big the robot would be, what its sensors would react to and even give the robot a name!

This could work individually or in small groups.

Part 3-20 minutes

Together with the group, imagine that you are producing a robot catalogue... Model how to label a diagram.

Ask the children to add labels to their own diagrams and write a paragraph that summarises the features and functions of their robot.

Part 4-5 minutes

Make a wall gallery of all the robots and encourage everybody to have a look.

Alternatives

Robot role-play!
Expanding on the last bit of part 1* children in pairs could alternate playing their newly invented robot and giving instructions.



Watch the FULL

Robots
episode

youtube.com/ngenvafrica





Wetlands Activity



Overview

Construct an eco system and observe over time.

Part 1 - 15 minutes

Ask: What is a wetland?

Can you think of any wetlands closeby or far away?

What lives in a wetland?

Why do they like living there?

Gather ideas and introduce scientific vocabulary. Emphasise how important wetlands are including their role in minimising floods, filtering water and buffering the impact of storms. Demonstrate the water filtering effect using a curved plastic bottle laid horizontally with the topside cut out, stuffed with a sponge (the sponge represents the wetland). Pour a cup of dirty water onto the sponge, and tip the spout of the bottle towards a second, empty cup. Observe the sponge absorbing the dirt and releasing clearer water into the cup. (see video, 18mins in!)



Part 2 - 30 minutes

Make your own ecosystem!

Add natural materials (dirt, sand, rocks, sticks, plants...) into a plastic tray. There may be some bugs too, although we must be careful about how we transport them. Arrange in a way that you think will make an effective habitat. Cover with netting. This could work well in pairs or small groups.



Part 3 - On following days - 5 minutes each day

Return to the ecosystems, observing changes and signs of life. Encourage the children to use scientific vocabulary, and to observe each other's ecosystems for further comparison.

Cross-curricular Links

geography

Life-Skills

inquiry, observation

About this activity

In this activity you're going to learn about wetlands.

Time 1 hour

Materials

- ✓ Plastic bottle
- ✓ Scissors
- ✓ Sponge
- ✓ Water
- ✓ Cups (ideally clear)
- ✓ Plastic trays (ideally clear)
- ✓ Natural materials (dirt, sand, rocks, sticks, plants..)
- ✓ Netting

Vocabulary

habitats Flooding
delta Swamp Food-chain
adaptation ecosystem

Learning points

- A wetland is a piece of land where water meets land, which is seasonally or permanently flooded with water (this can be saltwater or freshwater).
- Wetlands create a unique habitat for particular animals and plant-life eg weavers, shoebill, lungfish, crocodile, water-lilies, papyrus.
- Wetlands exist all over the world, Africa has many important wetlands.
- A delta is where a river ends by spreading out into the sea.
- Wetlands can help to stop floods and act as a water filter, they also help to protect us from storms.

Alternatives

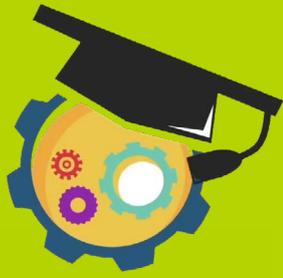
Choose a patch of ground/vegetation to return to again and again. Observe what is consistent and what changes over time. Notice the plant and animal life and consider what makes this patch a good habitat.



Watch the full
Wetlands episode



youtube.com/ngentv africa



N*GEN
NEXT GENERATION

Activity Card

About this activity

In this activity you're going to learn about constellations!

Time 1 hour

Materials

- ✓ Pencil ✓ Card
 - ✓ Plasticine / blue tac
 - ✓ Thread / wool / string
- (It works best when there is contrast between the card and thread colour)

Keywords:

Space earth sun star
planet constellation
gravity rotate

Learning points

- Earth is a planet, with a solid surface made of rocks
- Earth rotates around the sun - 1 rotation around the sun takes 1 year - this is why we have seasons
- As it rotates around the sun, the Earth spins on its axis - 1 rotation takes 24 hours - this is why we have night and day
- Gravity is a force that keeps our feet on the ground
- The sun is a star, made of hot gas, 150 million km from the Earth
- A constellation is a group of stars that form a shape or pattern
- The other planets are...Mercury, Venus, Mars, Jupiter, Saturn, Uranus and Neptune
- Earth has 1 moon - 375,000 km away
- All of these elements together make the solar system

Space activity

Make a constellation!

Overview

Designing and making a constellation artwork using thread and cardboard

Part 1 - 15 minutes

Ask:

- What do we know about planet Earth?
- Why do we have night and day?
- Why do we have seasons? Share ideas and reinforce key vocabulary.

Ask:

- What else do we see in the night sky?
- Introduce the idea of a constellation - a group of stars that form a shape or pattern.
- Draw a few examples on a board / mark in the ground - eg Orion

Part 2 - 30 minutes

Now let's invent our own constellations - can you think of a shape or symbol that is important to

you? What pattern would you like to see lighting up the night sky? Model an example, then encourage the children to design a few alternatives drawing in pencil on paper. Show the group how to punch holes in card by pushing a pencil through card into plasticine / something soft. Model punching holes to plot a constellation, threading wool/string back and forth through the holes until the design is complete (don't worry if the back looks messy!) Once they have decided on their favourite design, the children can do this too.



Part 3 - 15 minutes

Now the children can show their constellations to each other in small groups. Encourage them to talk about why they have chosen their symbol and what it means to them.

Cross-curricular links -
art, speaking and listening
Life-skills
creative thinking,
self-awareness

Alternatives

Design constellations by arranging found objects on the floor/ table - sticks and stones could work well.

ORION

Watch the full
Space episode!



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NEXT GENERATION

Activity Card

Food Activity



Overview

Simulate digestion using a clear plastic bag, soda and food.

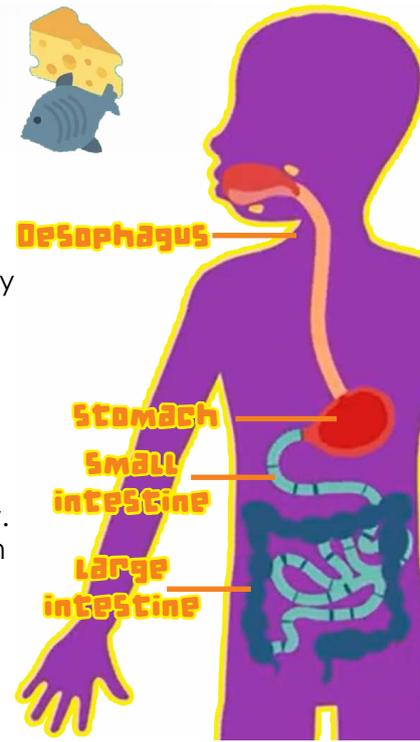
Part 1 - 20 minutes

Start by sharing a healthy snack - it could be a piece of fruit or vegetable. Find out what the children already know about digestion.

Ask:

- How do we know when to eat?
- How does food help us?
- Where does food go when we swallow?
- What foods are healthy?

Introduce and reinforce scientific vocabulary. Draw a large diagram of the digestive system where everybody can see it. Ask the children to help you label it and encourage them to locate the key parts within their own bodies.



Part 2 - 20 minutes

Model the activity, explaining that the bag represents our stomach, the soda represents our stomach acid and the bread / banana is an example of food. Add the food and soda into the bag, seal it and start to shake and knead the bag. This activity could work well in small groups to avoid food waste. Groups could replicate the activity, passing the bag around to squeeze the contents and observe them breaking down. Relate what has happened to the way that our digestive system functions.



Part 3 - 20 minutes

Introduce the different kinds of nutrient; proteins, fat, carbohydrates, minerals, vitamins and water.

If various different foods are available, you could do a sorting exercise. Alternatively, look together at some food packaging to illustrate the idea that each food contains a different combination of nutrients.

Explain that eating fresh foods of lots of different colours helps us to ingest lots of different vitamins. Challenge the children to think of foods that are yellow - orange - red - purple - green.

To finish, ask the children if they are feeling energetic. Maybe some food that they have eaten earlier in the day has reached the point in the digestive system where the nutrients are being absorbed and converted to energy. Let's find out! Encourage the children onto their feet and do a few exercises together - star jumps and running on the spot. We have the energy to do this thanks to food!

About this activity

In this activity you're going to learn about food.

Time 1 hour

Materials

- ✓ Heathy snack if available - for children to eat
- ✓ Small amount of bread / banana / similar and soda - to illustrate digestion
- ✓ Foods from different food groups - for sorting / looking at packaging
- ✓ Sealable clear bag
- ✓ Pen or pencil

Vocabulary

- ✓ Saliva
- ✓ Chewing
- ✓ digestion
- ✓ digestive System
- ✓ oesophagus
- ✓ proteins
- ✓ fat
- ✓ minerals
- ✓ vitamins
- ✓ amino acids
- ✓ intestines
- ✓ bacteria
- ✓ diet
- ✓ omnivore
- ✓ carbohydrates

Learning points

- we get our energy from food
- the feeling of hunger is our brain telling our body that we need energy
- food contains nutrients (proteins, fat, carbohydrates, minerals, vitamins and water)- each have a different purpose in keep our bodies healthy
- the process of breaking down the food into its individual nutrients via our mouth, oesophagus, stomach and intestines is called digestion
- water is an important nutrient that helps to regulate our body temperature.
- It is important to eat a variety of foods and drink plenty of water
- nutrients travel around our bodies via our blood
- The parts of food we don't need come out of our bodies as poo!

Alternatives

Use found objects to assemble a model of the digestive system - eg packaging, containers, string, household items(no sticking required)

Cross-curricular Links

PE, Maths (sorting element)

Life-Skills

self-awareness, inquiry

Watch the full **Food Activity**

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