



1 Unit summary

In this unit, role playing pirates provides the context for floating and sinking, sorting and identifying materials and animals alongside activities to develop children's creativity and problem solving.

Science learning

This unit focuses on four main areas:

- Floating and sinking, through problem solving to make pirate boats and rafts.
- Sorting and identifying materials, through sifting and using magnets.
- Sorting and identifying animals, particularly from habitats such as the sea and rainforest.
- Supporting the development of children's understanding of different foods and changes in materials during cooking, by designing and cooking pirate food.

Science for practitioners

The concept of floating and sinking due to density is too abstract for children at this age, so the key area to develop is children's ability to ask and answer their own questions through exploration. Their questions can become apparent to the practitioner when observing

children, e.g. a child might put an object in the water, observe, then push it in and let go. The role of the adult is to help children articulate their thoughts by working alongside them, such as:

- *'I wonder if this will float/sink ... ?'*
- *'I wonder if it will stay under the water when I let go ... ?'*
- *'I wonder what will happen if I add more treasure to the boat ... ?'*

Science progression

An important element of science in the Early Years is supporting children to talk about what they are doing and thinking. Laying good foundations will require practitioners to consciously model language such as, idea, test, time, record, measure, change, question, happen, which are key words used in Key Stages 1 and 2.

Switched on Science links

- Key Stage 1, Year 2 Topic 2 – Materials Monster

Prime areas

Communication and Language

Children listen to pirate stories (see 'Resources' section), join in by doing pirate actions and take speaking parts where they show understanding of context by 'speaking like pirates' and using pirate language, such as 'ahoy mateys' and 'shiver me timbers'.

Children are able to recount science activities, such as finding buried treasure using a magnet, saying what happened, how they made a pirate boat or raft using past tense.

Personal, Social and Emotional Development

Provide large boxes and crates for children to create their own pirate ship. This will encourage decision making, team work, listening to ideas from other children and making compromises.

Physical Development

In PE, use equipment to develop children's large motor skills and balance, e.g. to jump across from island to island (mats), climb up to the crow's nest (climbing frame) and walk the plank (benches).

Specific areas

Literacy

Create a Pirate Reading Ship or Cove filled with pirate books (see 'Websites and books' section) placed in a treasure chest. Include speech bubbles with pirate sayings, perhaps coming from photos of the children dressed as pirates. Make a dictionary containing pirate vocabulary such as Jolly Roger, flag, mast and treasure.

Mathematics

Plan for children to develop positional language when finding treasure, such as counting the number of steps right, forwards and backwards. Children could count gold coins and use early division by dividing, for example, eight gold coins between two pirates. Pirate maps are fun; children use pirate co-ordinates and 'win' a gold coin when they successfully use them to find buried treasure.

Understanding the World

Children talk about similarities and differences between themselves and pirates.

Children use BeeBot to direct to find X marks the spot on a floor Pirate treasure map.

Expressive Arts and Design

Children make a pirate boat from boxes and crates and dress up to role-play pirates either indoors or out. They could learn sea shanties and pirate songs to sing in their role-play boat.

Make a scarecrow in the form of a pirate, ask children to choose clothes, and decide key features, e.g. peg leg, hook, eye patch and parrot on shoulder.



2 Getting ready



Resources

Animal puppets, BeeBot, Binoculars, Gold coins, Lolly sticks, Old jewellery, Online resources via My Rising Stars, Pirate dressing-up clothes (including eye patches), Pirate maps, Plastic bottles, Stuffed animals, Telescopes, Treasure chest, Toy metal detector, Magnets.



Websites and books

Captain Flynn and the Pirate Dinosaurs – Giles Andreae and Russell Ayto

How I Became a Pirate – Melinda Long and David Shannon

Mrs Pirate – Nick Sharratt

My Granny is a Pirate – Val McDermid and Arthur Robins

Pirates love Underpants – Claire Freedman and Ben Cort

Pizza for Pirates – Adam and Charlotte Guillain

The Night Pirates – Peter Harris and Deborah Allwright

Portside Pirates! – Oscar Seaworthy and Debbie Harter

The Pirate King website has a useful site for information for teachers on pirates and sea shanties



Key vocabulary

Binoculars, Bow, Coins, Gold, Jolly Roger, Map, Mast, Pirates, Plank, Ship, Stern, Telescope, Treasure.



Home science links

Let parents know well in advance that there will be a 'Shipwrecked Day'. Children will use their knowledge of pirates to design and make their own pirate costume, with the help of their family. Tell parents that the ideal costume is not one that has been bought especially for the day, but one where children have made their eye patch and cutlass, to develop specific areas of learning, e.g. creativity, design and technology.



Health and safety

When using a telescope or binoculars, children should be taught not to look directly at the Sun.



3 Explorations

Think about how different areas flow, so that children can transfer ideas and things that they have made from one area to another, e.g. treasure into boats to float, or place in a cave.

Introductory activity

You could begin this topic by reading one of the many pirate-themed books suggested, or watching an excerpt from, e.g. the film *Peter Pan*. Later return to this activity

when designing and making a role-play pirate island and pirate ship with the children, based on what they have learnt (see the Free-flow explorations section).

Focussed exploration

Activity 1 – Buried Treasure

Treasure is easily buried in the sand tray or Tuff Spot or Tray in compost, where children can retrieve it using a toy metal detector. You could bury a specific number of objects, geometric shapes or letters. Children could use magnets (to find treasure made from metal) so that they develop understanding that magnets attract some

metal objects. Give children sieves for panning gold (nuggets of iron pyrites or Fool's Gold). Hide different size nuggets in clean soil or sand and give children sieves of different sizes so that they can choose the best for finding the gold. Give children a pirate map of the Tuff Spot too to find the buried treasure.

Activity 2 – Pirate Treasure Chest

In the treasure chest, place gold coins, gemstones, aluminium foil, different jewellery, e.g. fake gold, silver chains and pearls, which many parents and staff might donate. The children could identify jewels and sort

them into different types, placing them in mini treasure chests with picture and word labels, such as gold, silver, rubies, pearls. This helps to develop children's early understanding of rocks and precious stones.

Activity 3 – Floating and Sinking

Explain to children that they are going to find out about things that float and sink, in preparation for making a pirate ship. Give children access to a wide range of objects made from different materials, to explore which ones float and sink. Ensure that an

adult explores alongside children to model words such as water, float and sink. Pose '*I wonder ...*' statements which encourage children to make comparisons and test ideas, such as '*I wonder if I can make this floating object sink ... ?*'

Activity 4 – Pirate Ship

Following their exploration of floating or sinking, challenge children to make a pirate ship using a range of materials (including plastic bottles, string and lolly sticks) that include a mast, sail and pirate flag. Once children have designed, made and tested their ship they could be challenged to find out:

- How far the ship travels when the wind (hand fan) blows?
- Which ship travels the furthest?
- How much treasure (this could be iron pyrites) can the ship hold before it sinks?

Encourage children to record numbers using a simple table of results drawn with the support of an adult.

Free-flow exploration

Activity 1 – Pirate Ship Role-Play Area

Using children's existing knowledge of pirates, engage their help in creating a pirate role-play area either indoors or outdoors, such as a pirate ship with plank to walk, desert island with pirate shipwreck, a crow's nest or upper deck. The role-play provides the context for a range of science-based activities, so do try to make

aspects of the role-play realistic, e.g. birds and other animals, desert islands, so that children's knowledge of animals and environments is developed.

Create a Pirate Cave with children or provide crates, frames and materials for them to create their own.

Taking it further

Ask children 'I wonder why pirates wear eye patches?' You could create a working wall where children post their ideas which they write, have scribed or bring their ideas from home.

This might lead children to try out eye patches to see what effect it has on what they can see, as well as look at why some people have to wear eye patches and glasses today.



4 Characteristics of effective learning

Playing and exploring

- Children role-play being a pirate using telescopes, eye patches, clothing, etc.
- Children are able to act out being a pirate with other children, moving from, e.g. the pirate ship to the cave.

Active learning

- Children can maintain focus on searching for treasure and in other activities in this unit.

Early learning goals

ELG 1 Listening & Attention: All activities; **ELG 2 Understanding:** All activities; **ELG 3 Speaking:** All activities; **ELG 4 Moving & Handling:** All activities; **ELG 5 Health & Self-care:** N/A; **ELG 6 Self-confidence & Self-awareness:** All activities; **ELG 7 Managing Feelings & Behaviour:** All activities; **ELG 8 Making Relationships:** All activities; **ELG 9 Reading:** Introductory activity, Focussed exploration 1; **ELG 10 Writing:** Introductory activity, Focussed exploration 1; **ELG 11 Numbers:** Focussed exploration 1; **ELG 12 Shape, Space & Measure:** Focussed exploration 1; **ELG 13 People & Communities:** Focussed exploration 4; **ELG 14 The World:** N/A; **ELG 15 Technology:** Focussed exploration 1; **ELG 16 Exploring & Using Media & Materials:** Focussed exploration 4; **ELG 17 Being Imaginative:** Focussed exploration 4.

- Children show high levels of energy and fascination with experiences such as exploring rocks and stones in the treasure chest.

Creating and thinking critically

- Children think of ideas why objects float and sink and are able to problem solve and find new ways of making things that float, sink.
- Children are able to plan and make decisions about how to make a model pirate ship, how well it is progressing and the success of their end product.