



Thumbs Up

We were great at the task because...



Thumbs Sideways

We were good at the task because...



Thumbs Down

We were OK at the task because...

we identified the real issues beneath the challenges the crew faced, e.g....

we identified the science ideas behind the problems, e.g....

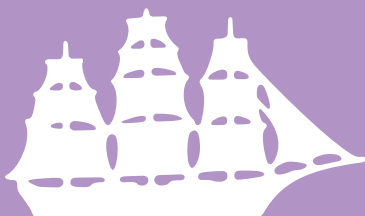
we suggested an investigation that could overcome the challenge, e.g....

we decided together how to go about the task, by...

we each took responsibility for part of the work, e.g....

we...

Next time we will...





Pirate Ship Orca

Teamwork: to overcome challenges together

Investigative skills: to ask questions that can be investigated scientifically



Generic task Dragon Mystery



Learning Objective

Teamwork: to overcome challenges together

Introducing the task 10 minutes

Explain that this challenge will bring up a lot of 'difficult' moments so the team will need to work well together to be successful. They will need to co-operate, reach agreements, listen to each other, respect each other's opinions and overcome frustrations.

Running the task 35 minutes

You need: a set of cut up clues in an envelope, 5 dragons names on the board or flip chart.

- 1 Organise the children into teams of four to six.
- 2 Read out the Five Dragons story:
'Once there were five evil dragons. Their names were Scorchbreath, Ironshanks, Firestorm, Morgana and Furniss. They captured Princess Tamara and held her prisoner. She was tied to a stake with ropes at her wrists and ankles. But she escaped and her father the King came back with knights and dragonslayers to punish the dragons. As the king was riding towards them the dragons were arguing about who had helped her to escape. They all suspected each other.'

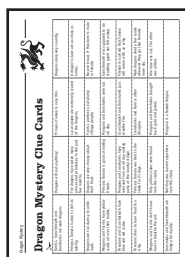
- 3 Explain to the teams that they will be given some clues which may or may not be useful. They must not show anyone else their clue. They can read it aloud.
- 4 As a team, the children must consider all the information and try to agree on how Princess Tamara escaped. Did one of the dragons help her? And why?
- 5 Review the task by asking questions, such as:
 - How did you deal with everyone talking at once?
 - How did the team organise themselves?
 - Was everyone involved in solving the mystery?
 - Did the team show good co-operation skills?
 - What went well?
 - How were people feeling about the way the team were working together?

Helpful Hints

Observe the teams and help if you think they really need it.

The Solution - Furniss helped Tamara escape by cutting one of her ropes because he was tired of eating skinny Princesses.

Resources





Science embedded task Pirate Ship Orca



Learning Objectives

National Curriculum

Sc1: 2a

Science Investigative Skills

to ask questions that can be investigated scientifically and decide how to find answers

Success Criteria

To be successful the children will:

- identify the real issues beneath a challenge or problem
- decide together how to go about the task
- take responsibility for part of the work
- identify science ideas and how they could be investigated.

Introducing the task 5 minutes

Discuss with the children the things they feel can help when working on a task as a team, encouraging them to draw on experiences they have had of working together (relate this back to the generic task). In particular, bring out the ideas of deciding as a team how to go about the task, e.g. dividing up and taking responsibility for smaller pieces of the task, either as pairs or individually, voting on who does what, coming together to review, draw together ideas and finish off the task.

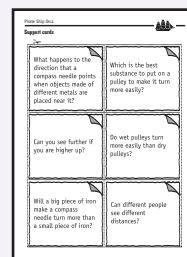
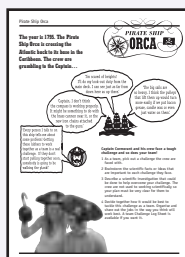
Running the task 40 minutes

- 1 Organise the children into teams of four to six.
- 2 Read aloud or hand out Pirate Ship Orca; individual children should read out the different comments. Set the time limit of 30 minutes for the work and give reminders every 10 minutes.
- 3 Supply Pirate Ship Orca Support Cards as appropriate to support the investigative part of the task. This task is intended to be discussion based, however where written evidence is required use the Pirate Ship Orca Challenge Log Sheet.

Reviewing the task 15 minutes

Discuss with the children some of the key science ideas they were able to link to the various conversations and also some of the investigations they suggested. Ask the children to discuss in their team how successful they were at identifying and overcoming the challenges together. Stress that they should focus on positive aspects of the way they worked as a team. Involve the children in making an overall judgement about how well they overcame challenges together using the assessment for learning Smart Grid (see back cover).

Resources





Dragon Mystery Clue Cards



Furniss, Scorchbreath and Ironshanks are male dragons.	Morgana will eat anything!	Princess Tamara is very thin.	Dragons sleep very soundly.
Princess Tamara is able to shrink quickly.	The dragons have eaten many princes and princesses in the past few months.	Local people are extremely scared of the dragons.	A dragon's claws are as sharp as knives.
Dragons are too clumsy to untie ropes.	Dragons are very choosy about their food.	Furniss prefers to eat plump village people.	No-one knows if Firestorm is male or female.
Morgana and Furniss have yellow scales all over their bodies.	Princess Tamara is good at making friends.	Morgana and Ironshanks were out all day.	Scorchbreath was supposed to be standing guard but fell asleep.
Firestorm and Scorchbreath have blue and red scales.	Morgana and Ironshanks have returned from an all day raiding party at the nearby village.	Scorchbreath and Ironshanks just breathe fire.	Firestorm is afraid that Tamara will return with an army.
Firestorm likes to burn food to a crisp.	Princess Tamara was tied to the stake for 21 days.	Ironshanks and Furniss often disagree.	Male dragons shed a few scales wherever they go (but females never do).
Morgana and Furniss don't know how to breathe fire yet.	Only yellow scales were found near the stake.	Morgana and Ironshanks brought back gold and jewels.	One rope was cut, the other was untied.
Ironshanks and Scorchbreath are hungry for royalty.	Nothing was burned anywhere near the stake.	Morgana is a female dragon.	

The year is 1795. The Pirate Ship Orca is crossing the Atlantic back to its base in the Caribbean. The crew are grumbling to the Captain...

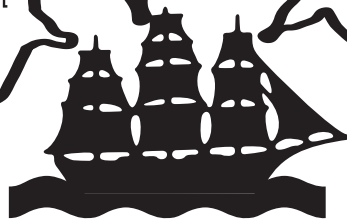


'I'm scared of heights!
I'll do my look-out duty from the main deck. I can see just as far from down here as up there.'

'The big sails are so heavy. I think the pulleys that lift them up would turn more easily if we put bacon grease, candle wax or even just water on them.'

'Captain, I don't think the compass is working properly. It might be something to do with the brass cannon near it, or the new iron chains attached to the guns.'

'Every person I talk to on this ship tells me about some problem! Getting these lubbers to work together as a team is a real challenge. If they don't start pulling together soon, somebody is going to be walking the plank!'



Captain Cormorant and his crew face a tough challenge and so does your team!

- 1 As a team, pick out a challenge the crew are faced with.
- 2 Brainstorm the scientific facts or ideas that are important to each challenge they face.
- 3 Describe a scientific investigation that could be done to help overcome your challenge. The crew are not used to working scientifically so your plan must be very clear for them to understand.
- 4 Decide together how it would be best to tackle this challenge as a team. Organise and share out the jobs in the way you think will work best. A team Challenge Log Sheet is available if you want it.





Important facts and scientific ideas linked to your challenge

*Challenge
log sheet*

Our recommended investigation





Support cards



What happens to the direction that a compass needle points when objects made of different metals are placed near it?

Which is the best substance to put on a pulley to make it turn more easily?

Can you see further if you are higher up?

Do wet pulleys turn more easily than dry pulleys?

Will a big piece of iron make a compass needle turn more than a small piece of iron?

Can different people see different distances?