



**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 thought about why  
people might have  
different ideas, opinions  
and feelings, some reasons  
were...

we shared our own ideas,  
opinions and feelings on  
different issues such as...

we presented a range of  
ideas by...

we explored how scientific  
developments improve  
everyday life, e.g....

we made links between  
scientific developments  
and other effects they  
have e.g....

we...

Next time we will...





# Quick on the Draw

Communication: to ask different types of questions

Investigative skills: to use a wide range of methods to communicate data



## Generic task

# Electric Headband Game



### Learning Objective

Communication: to ask different types of questions

#### Introducing the task 10 minutes

Effective communication often relies on good questions. Different types of questions help us to obtain information, explore our thinking, check we understand, reflect on what is happening and so on. This game involves us asking questions of different types, e.g. closed and open questions to identify objects or items related to the science topic – electricity and circuits.

A closed question is one that provides a straight forward answer, e.g. What is your name? Answer: John. Are you a boy? Answer: yes

An open question is one that provides answers which show more thinking, e.g. What do you think about this? How did you do that?

In both cases, questioning is not a one-way process. Listening to answers and asking your own questions in response can further clarify meaning.

#### Running the task 15 minutes

You need: thin card for a headband for each child, a group of friends.

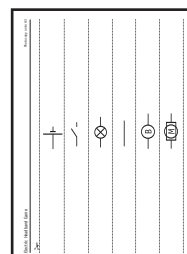
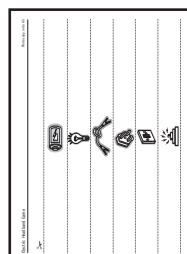
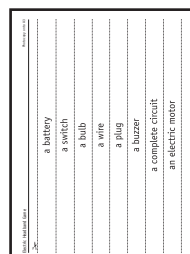
- 1 Ask the whole class to sit in a circle.
- 2 Give each child a headband with the word, picture or symbol facing outward so that they cannot see it.
- 3 One child stands up and asks a closed question to the child sitting to their right e.g. 'Am I part of a circuit?', 'Do I produce electricity?'. Questions can only be answered with 'Yes', 'No', or 'I don't know'. Once a question has been asked and answered another child has their turn.
- 4 The questioning and answering passes around the circle until the children can identify the items on their headbands.
- 5 Early finishers can take a spare headband to rejoin the game.

#### Helpful Hints

Allow the children to practice in pairs before the main game starts. Give support in framing closed questions that require 'yes', 'no' or 'I don't know' answers.

This game could be used in non-scientific contexts, e.g. famous people, places etc.

### Resources





## Science embedded task Quick on the Draw



### Learning Objectives

#### National Curriculum

Sc1: 2h. Breadth of Study: Communication 2a

#### Science Investigative skills

to use a wide range of methods to communicate data

to use appropriate scientific language to communicate ideas and explain things

### Success Criteria

To be successful the children will:

- ask questions to clarify and make sense of what they have heard
- use different types of questions
- draw and label scientific diagrams
- use scientific vocabulary.

### Introducing the task 15 minutes

Remind the children about the Electric Headband game and mention the types of questions they used (open and closed). Discuss other types of questions that are useful, e.g.

Questions that ask people to explain their reasoning:

...Why do you think that...?

Questions which encourage people to think about what's happened:

...What do you think about what's been said so far?

Questions to find out how things were done:

...How did you do that?

It may be useful to display different question types on the board.

Explain that in this game the children will be communicating verbally, but with no restrictions on the types of questions or answers. The aim is to work with a partner to produce science diagrams that are detailed and accurate.

### Running the task 30 minutes

- 1 Organise the children into pairs.
- 2 Distribute Quick on the Draw Diagram Cards, one to each child ensuring that they do not show their cards to their partner and that they do not have the same card as their partner.
- 3 Ask the children with the same symbol on their cards to get together for 5-10 minutes, with a support assistant or teacher, to discuss what they think the diagram should look like and contain. They should draw their diagram together before rejoining their partner (use Quick on the Draw Support Cards as appropriate).
- 4 Each pair should then sit back to back making sure that their partner doesn't see the diagram they have sketched.
- 5 One child in each pair should then ask questions of the other to find out what they should be drawing. They could ask about the shapes or objects that are in the diagram, the size or shape, the colours in the diagram, whether it is labelled or not etc. The pair can ask as many questions as they like but must not show each other their diagrams or say exactly what the diagram shows by name.

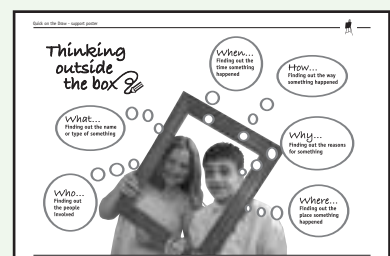
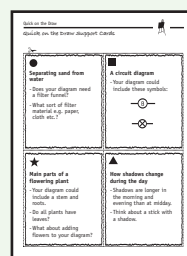
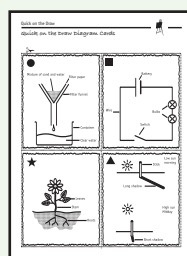
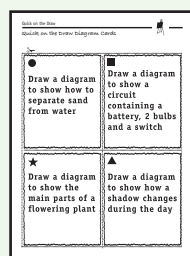
- 6 When they think they have finished, the drawer should guess what the diagram is showing and compare it with the original and the standard diagram. How similar are they?

### Reviewing the task 15 minutes

As a whole class discuss and review the meaning of the science diagrams using the standard set. Reinforce relevant scientific language. Review how important it was to ask different types of questions to help us find out about different things. Ask the children to give examples of questions they asked and the types of answers they stimulated. If appropriate, add to the question list that was previously created, focusing on key question words and what they help us find out. A support poster is provided called 'Thinking outside the box'.

Involve the children in making an overall judgement about how well they worked at asking different types of questions using the assessment for learning Smart Grid (see back cover).

### Resources





a battery

a switch

a bulb

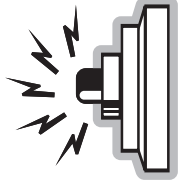
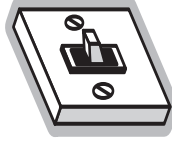
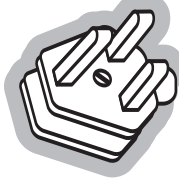
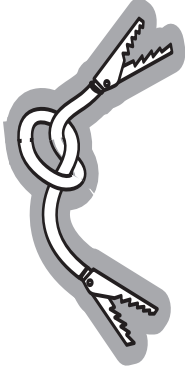
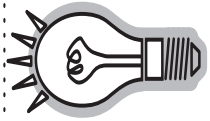
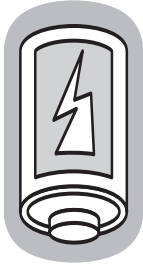
a wire

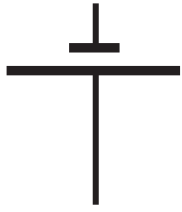
a plug

a buzzer

a complete circuit

an electric motor







Quick on the Draw Diagram Cards



**Draw a diagram to show how to separate sand from water**



**Draw a diagram to show a circuit containing a battery, 2 bulbs and a switch**



**Draw a diagram to show the main parts of a flowering plant**

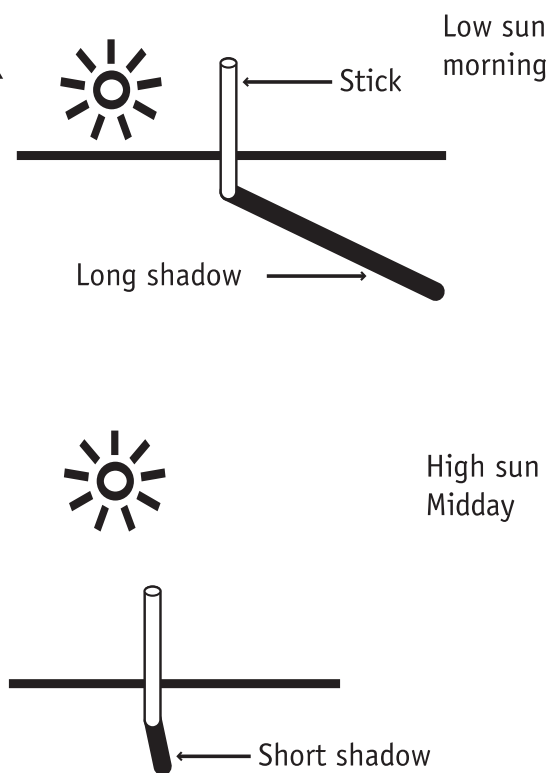
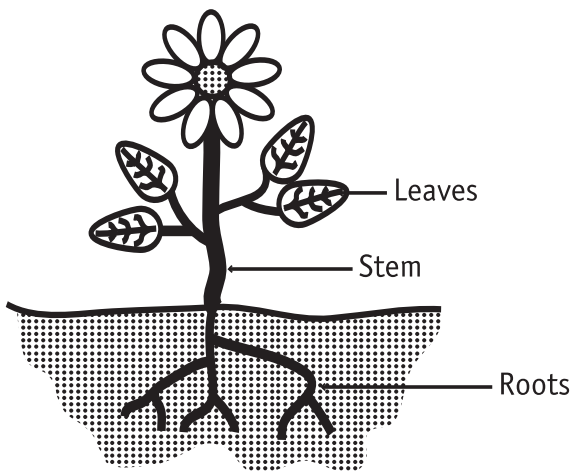
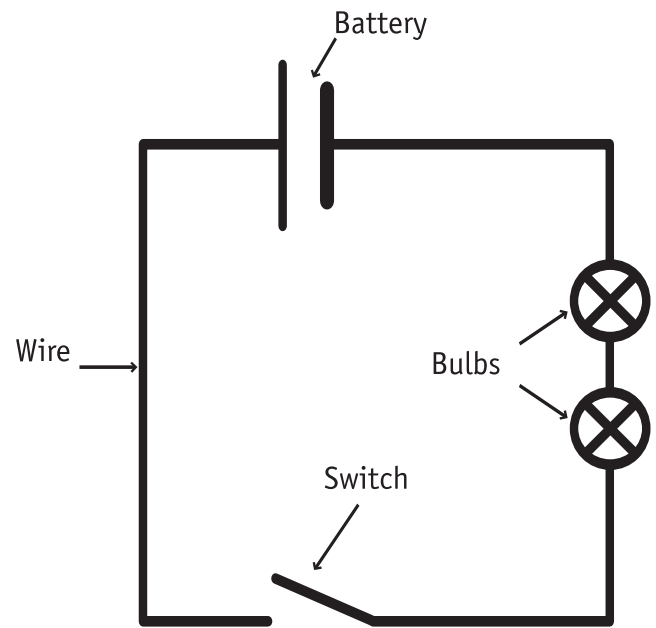
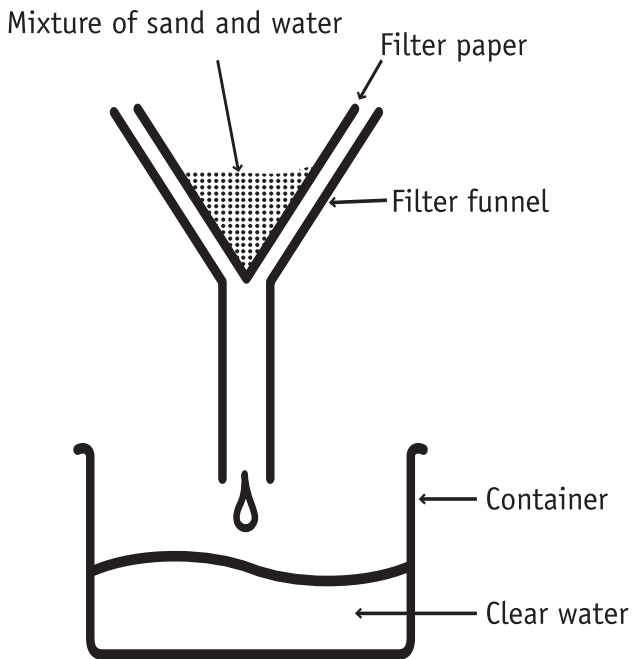


**Draw a diagram to show how a shadow changes during the day**





Quick on the Draw Diagram Cards





### Separating sand from water

- Does your diagram need a filter funnel?
- What sort of filter material e.g. paper, cloth etc.?



### A circuit diagram

- Your diagram could include these symbols:



### Main parts of a flowering plant

- Your diagram could include a stem and roots.
- Do all plants have leaves?
- What about adding flowers to your diagram?



### How shadows change during the day

- Shadows are longer in the morning and evening than at midday.
- Think about a stick with a shadow.

# Thinking outside the box

What...

Finding out the name  
or type of something

Who...

Finding out  
the people  
involved





**When...**

Finding out the time something happened

**How...**

Finding out the way something happened

**Why...**

Finding out the reasons for something

**Where...**

Finding out the place something happened

