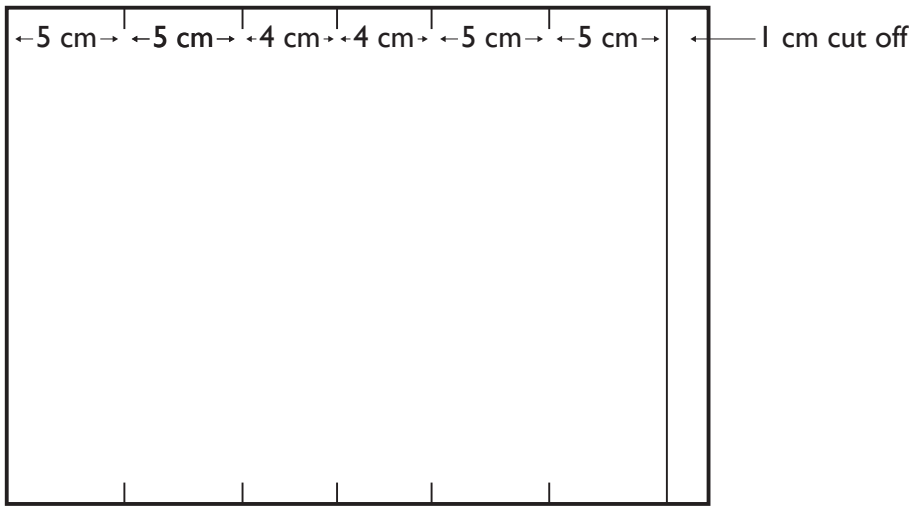
16A

Name:..... Form:.....

Based on The Stone Age student book

A stone circle and the Sun (i)



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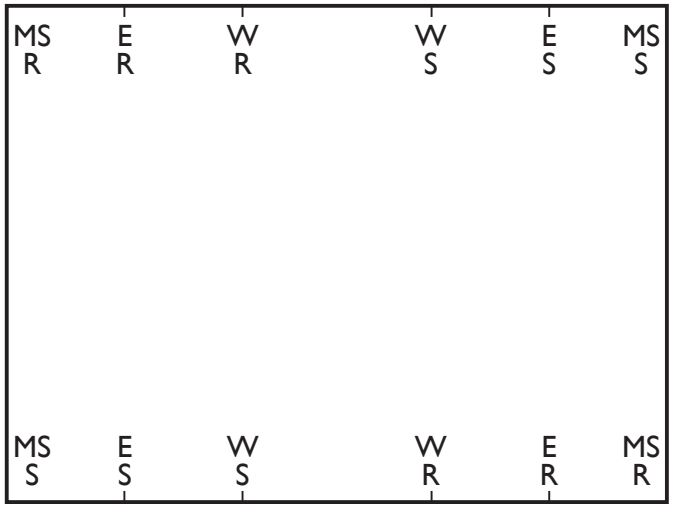

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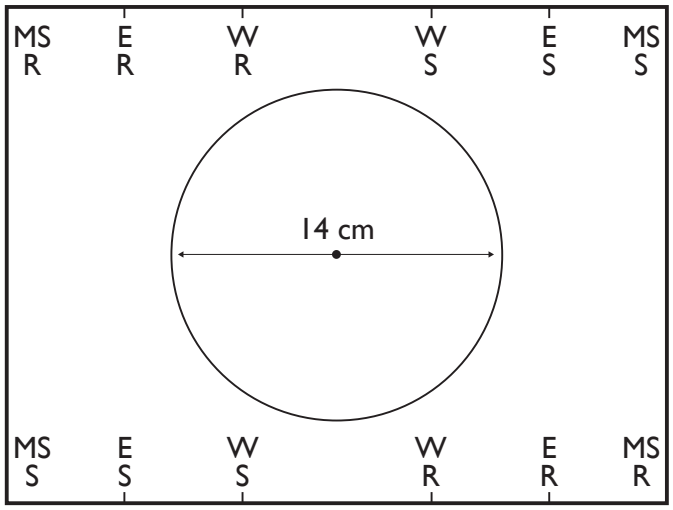


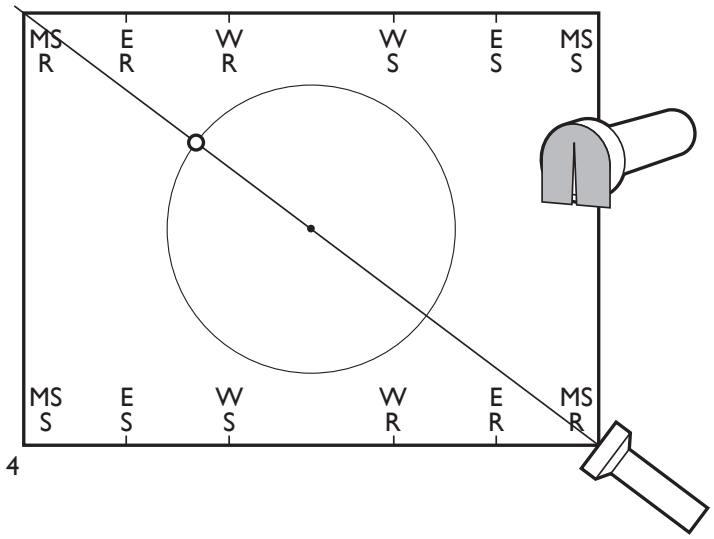
3

16B

Name:..... Form:.....

Based on The Stone Age student book

A stone circle and the Sun (ii)



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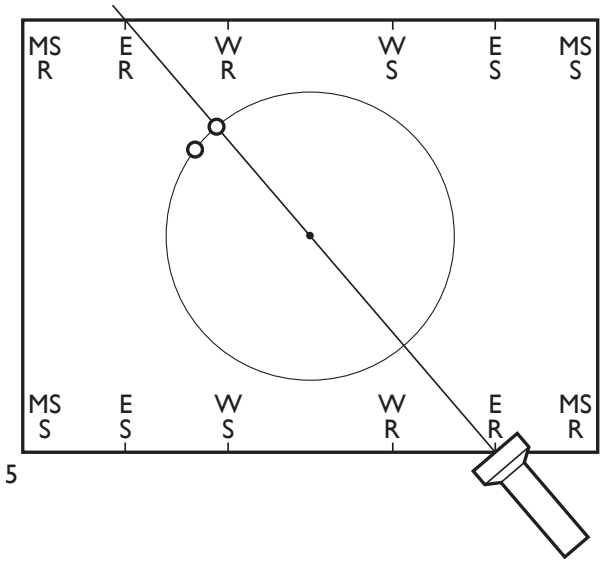

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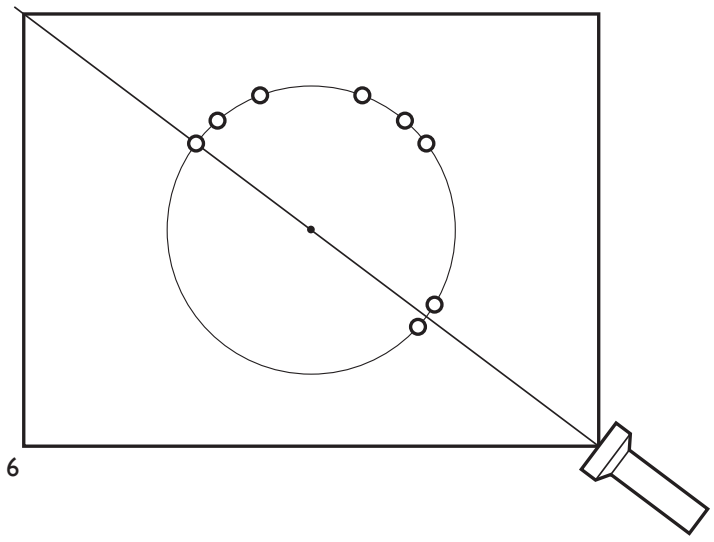

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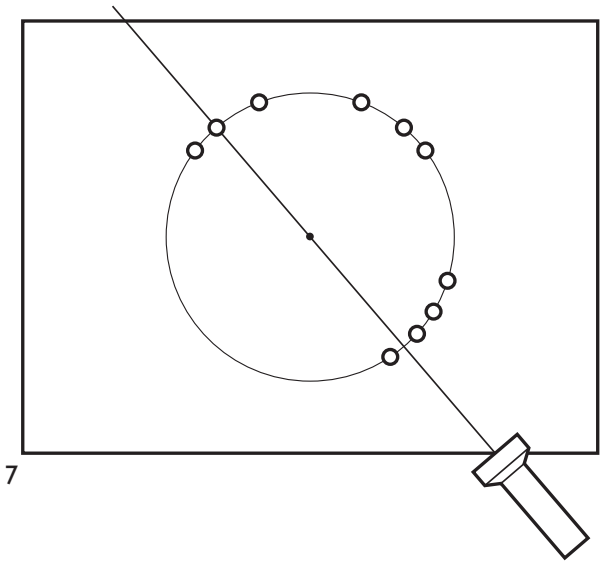

7

Teacher's sheet

Based on The Stone Age student book

A stone circle and the Sun

Objectives

- To appreciate the complexity of building a stone circle.
- To demonstrate how a stone circle may have been used to identify events in the movement of the Earth around the Sun.

Cross-curricular links

History

2a A characteristic feature of the period.
4a To find out about people from an appropriate range of resources.

Science

Sc4
4d The Earth orbits the Sun once each year.

Design and technology

2d Measure and shape a range of materials.
3a Reflect on the progress of their work and identify ways they could improve their product.

Mathematics

Ma 3
4b Choose and use suitable measuring instruments for a task, read scales with increasing accuracy.

Resources

You will need pictures of stone circles.

Each child or group will need a copy of worksheets 16A and 16B, a piece of A4 paper, a torch, a piece of card to fit over the front of the torch, scissors, sticky paper, ruler, pencil, pair of compasses or circular object with a diameter of 14cm, 15 pieces of modelling clay about 1cm high (to represent stones in the circle).

Starter

Show the children the pictures of stone circles. Tell them that nobody is really sure what they were used for but many archaeologists believe that they were temples which were homes for the spirits of the dead. They also believe that the circles allowed people to tell the time of the year by the way the Sun cast light on the stones or the way the stones could be used to make views of the Moon. Tell them that whatever their use they took a great deal of making so perhaps one or both of these ideas may be correct.

Main activities

1. Tell the children that they are going to make a model stone circle to tell when it is midsummer, when spring and autumn begin (at the equinoxes) and when it is midwinter. They are going to use a torch as a model Sun. Remind the children that they should never look at the Sun as it can damage their eyes.
2. Issue worksheet 16A and ask the children to measure 1cm in from one end, draw a line and cut off the thin strip.
3. Ask the children to measure out the dimensions and mark them as shown in step 1.
4. Ask the children to label the marks. MS R = midsummer sunrise, ER = equinox sunrise, WR = Winter sunrise. WS = winter sunset, ES = Equinox sunset, MSS = midsummer sunset.
5. Let the children set a pair of compasses to give a radius of 7cm (or use a circular shape 14cm in diameter) and draw a circle as step 3 shows.
6. Issue worksheet 16B and let the children make a torch mask with a slit in it as shown in step 4.
7. Darken the room and let the children shine their torches from MSR on one edge of the paper to MSR on the other.
8. Let them take a small piece of modelling clay (stone) and place it in the circle so that the beam of light shines on it as step 4 shows.
9. Move on to step 5 and let the children line up the second 'stone', then move on and line up all six stones. This completes the time measuring device of the circle so the children can move on to marking out the rest of the temple which is concerned with providing a home for the spirits of the dead.
10. In step 6 the children mark out two stones in the circle, which allow the beam to shine past them onto the stone recording midsummer sunrise.
11. In step 7 a second pair of stones are added which allow light to pass between them and shine on another stone at the far side of the circle. The children then continue to add more stones to the circle which do not affect the beams of light.

Plenary

The children demonstrate how light passes across their stone circles. You could discuss with the children how complicated it must have been to set up a real stone circle and say that it is another example of Stone Age people being much more intelligent than they are sometimes portrayed in films and on the television.

Teacher's sheet

Based on The Stone Age student book

Outcomes

The children can:

- Appreciate the complexity of building a stone circle.
- Make a model stone circle and demonstrate how a stone circle may have been used to identify events in the movement of the Earth around the Sun.