

Teacher Notes

Shadows 'Before Before After After' Task

Using the template provided, template with the teddy bear photographs including the 5 times of the day, the teacher copies one for each student.

Each student will perform the task on their own.

The goal is for each student to apply their knowledge and understanding to create a visual timeline from 8.30am to 4.30pm using the position of the shadow in relation to the teddy bear, and the position of the light source (the sun). *[These photographs were taken on the same day in November 2010]*

The students will write an explanation, in five parts, using the vocabulary word banks used during the unit to explain what is happening. These explanations will be written underneath the 5 photographs.

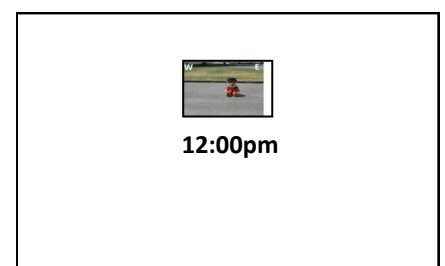
Students need:

- a sheet of A3 paper
- a pair of scissors and glue
- writing equipment



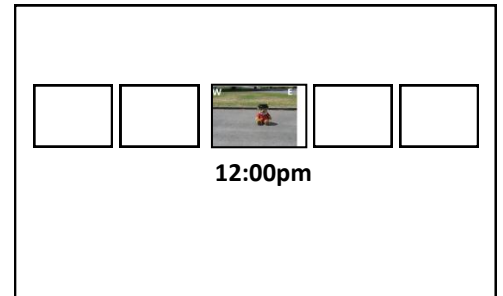
Before Before After After task

- Using the clues on the page the student needs to cut out the five photographs from the template.
- Students need to look at the shadows from the teddy bear and using the clues W=West, E=East as well as the time intervals in the boxes they need to select the bear with the shadow that they think is at the 12:00pm position
- When the students have decided on the shadow they think best represents 12:00pm they place that in the centre of the A3 page about 1/3 of the way from the top and label 12:00pm.
e.g.



- When the middle of the timeline has been positioned the students then need to organize the other photographs so that two will be *Before* the 12:00pm midpoint and two *After*.

e.g.



- Students need to think about the position of the shadow in relation to the bear and then record the time underneath each photograph so that the picture above will represent 8:30am, 10:30am, 2:30pm and 4:30pm.

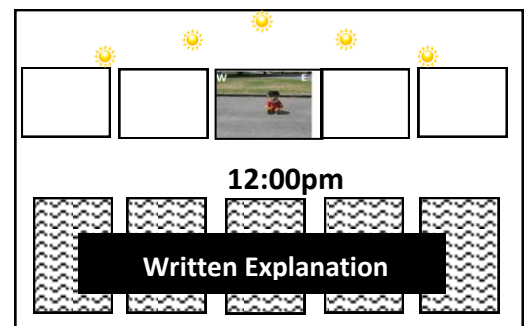
- Students then draw on the page above each photograph where they think the sun would be positioned in relation to the shadow.

eg.



- Finally, underneath each of the pictures the student needs to explain what has occurred in the timeline using the science specific vocabulary and showing their understanding of shadows and the effects of the light source.

e.g.



- Once the task has been completed the teacher makes a summative assessment based on the task criteria. (marking the work)

In addition to this students may get the opportunity to share their thinking:

- ✎ Student sharing to a small group of the whole class
- ✎ Students sharing to a small group or an adult in another class
- ✎ Students record their work and oral commentary as a digital movie
 - audience could be: another class at school; a school elsewhere in the world; parents; grandparents; movie onto class wiki; ePortfolio; or blog
- ✎ Students sharing 1:1 with the teacher

Differentiating to meet students' needs to ensure all parts of the task are done thoroughly.

- ✎ Breaking the task down into three parts
 - ☺ ordering and labelling the time and position of the sun
 - ☺ recording initial ideas (draft?)
 - ☺ explanation for each of the photographs
- ✎ Students who work with learning support staff can do this with the staff when they are in the room to support the student work :
 - individually;
 - in pairs;
 - in groups of three.

Note

The order on the template page given to the students is not in correct time order sequence.

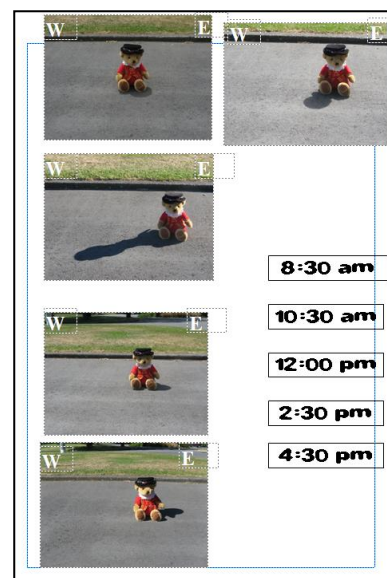
The correct time order is shown with the time in **red** next to the corresponding photograph below.

12:00 pm

8:30 am

2:30 pm

4:30 pm



10:30 am

8:30 am

10:30 am

12:00 pm

2:30 pm

4:30 pm