

**SHQ: How do shadows change with distance?**

In worksheet 11, you investigated some facts about light and looked at diagrams explaining how light travels. You considered key vocabulary about light and thought about light sources and light reflectors.

The first two activity sheets for this lesson will give you a chance to test yourself to see how much you can remember from the previous lesson's investigations! Have a go at the quiz sheets (see worksheet 12a and worksheet 12b) and if there are any questions that you are unsure about, do some research to find out the answers before checking the solutions at the end of each quiz.

Now that you have revisited the vocabulary and facts that we covered in our last lesson, we are now going to look in more detail about how and why shadows are formed.

There are two activity sheets for this lesson:

Worksheet 12c : How do shadows change when the light source changes?

Worksheet 12d: How do shadows change with distance ?

For each activity, you will be completing a small investigation.

Remember the rules of 'fair testing' when you complete your experiment (i.e. everything must be the same except one thing that can change and this is the thing that you are investigating).

Follow the instructions on the activity sheets carefully (the sheets refer to using a glue stick as an 'object' but any 'opaque' object will do) and write notes as you work.

You may want to consider the following points in your notes:

1. **What am I trying to find out** (objective of the investigation)
2. **How am I making this a fair test?** (What things stay the same and what thing do I change each time?)
3. **What do I predict** will happen?
4. **What measurements** will I take?
5. What **actually happened**?
6. **Why** do I think this happened?
7. If I did the experiment again, would I do **anything differently** and why?

You may want to ask someone else to do the experiments and see if they arrive at the same conclusions? We look forward to seeing the results of your investigations.