

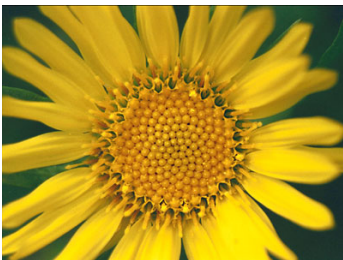
Introductory Task: Mathematics in real life

Mathematics is the science of patterns (Steen, 1990) and relationships and can be found all around us – in nature, in our homes, and in the objects we interact with everyday. In this introductory activity we ask you to put on your “math goggles” and take a close look at the objects around your home for examples of mathematical patterns. Some things to look for in your household objects are lines, symmetry, shape, size, quantity, repetition and measurement. These objects provide two examples:



mouse over images to zoom

Here we can see the ventilation holes on the back of a typical hair dryer. There are 9 holes in the first circle closest to the center, 12 in the next circle, and 15 in the next. Can you see a pattern emerging? How might you figure out how many holes there are altogether without counting them all?



Here we can see that the seeds in this yellow daisy form spiral patterns. Some go in a clockwise direction and some anti-clockwise. If you counted the number of spirals going in each direction you would come up with two numbers that make part of the Fibonacci sequence – 1,1,2,3,5,8,13,21,34...

Source: Phillips R. *Problem Pictures*, 2013 <http://www.problempictures.co.uk> last accessed 12-06-2013



Teaching Tip

Using math ‘problem pictures’ like these is a great way to help young learners to develop their ‘math eyes’. The best images for developing math eyes are snapshots of familiar things that capture some aspect of real life mathematics. In your objects, look for topics to discuss such as Pattern, Interpretation, Decision, Shape, Measurement, Number etc. and formulate suitable questions that prompt the learner to look for particular elements.



Learning Task

Photograph an object from around your house that contains a mathematical pattern and explain what you see. Introduce yourself and share your image with your peers.

Learning Outcomes

- To recognise, describe and represent patterns and relationships.
- To develop class cohesiveness (a great way for your class group to get to know each other).

Notes

For this task, we don't expect you to be Rain Man and identify complex number sequences. Keep it simple and describe any patterns you see and how they are sequenced. This might relate to shapes, sizes, numbers, lines or colours.

Note that '[math goggles](#)' are not the latest in Google eyewear, but an imaginary artifice to help get your mind into math mode. They are a handy accessory to go with your 'thinking cap'.

Time Commitment

Approx. 1 hour

Due

By the end of Week 1.

Procedure

1. Select an object from around your home or garden that has some special meaning for you and in which you can identify a mathematical pattern.
2. Take a digital photograph of the object with your camera or phone. Your image should be a .jpg or .png file, and not too large - about 800 pixels wide is good. If you're not sure how to resize your image, try [pic resize](#) (follow the prompts to get started, then in the resize option select 'custom size' and enter '800' for the width. It will then resize your image and you can download it back to your computer.)
3. In the [Introductions forum](#), introduce yourself and attach your photo to your post (click the "Choose file" button under the message box).
4. In your post, provide a short explanation (approx. 100 words) of what your 'math goggles' have revealed to you about your special object.
5. Look at some of the images that others in the group have posted. Can you see anything that they might have missed in their explanation. Can you add anything to their observations? Post a short reply to two of your peers, commenting on their observations.