# 'Working in the Kitchen' STEM Trail

There are two levels of questions colour coded as follows:

**Level 1 GREEN - suitable for younger children**
**Level 2 BLUE - suitable for older children**

The child can think about the answers, write the answers or record their responses using digital technology.

1. Before you enter the kitchen –

## Level 1 Green

Can you tell me about the door you see? What shape is the door?

Will it fall down when you open it? Why not?

Draw a picture of what happens when we open the door

## Level 2 Blue

Can you estimate the height and width of the door? What could you use to measure the height and width of the door? Feel free to measure the door.

What materials can you identify in the door and the door frame?

Which are natural, and which are man-made?

What angle will the rotation of the door make when you open it?

How did you open the door? Explain how this works.

Sketch your picture below and annotate it with labels and measurements.

2. Open the door to your kitchen and take two steps forward. Now turn around again and face the door. Consider why is it dangerous to put your finger close to the hinges.

## Level 1 Green

Stand still! What can you see? How do we know that people work in the kitchen? What words can you see? Are there any signs in your kitchen?

How many steps do you think it is it from where you are standing to …… (Estimate first, then check!!)

1. The sink – tell me what you see?
2. The sink to the fridge – what do you think we will see when we look inside the fridge? What do you hear?
3. The fridge to the cooker. How do we know if the cooker is turned on?
4. The cooker to the cutlery drawer? What will be in there? Do you think it is tidy?
5. The cutlery drawer to the bin? Is the bin empty of full? How do you know? When do you think it was emptied last?

Estimate first and record your steps here

| Steps to | the sink | the fridge | the cooker | the cutlery | the bin | |
|---|---|---|---|---|---|---|
| Estimate | | | | | | |
| Number of steps | | | | | | |

Where would you place the following signs in your kitchen?

hot water


danger

electricity

## Level 2 Blue

This door will open 90°. If it sticks a third of the way out, how many degrees will it be open?

Can you estimate the ceiling height in metres in your kitchen? Do you think ceilings are the same heights in all homes? Why/Why not?

Can you estimate the dimensions of the smallest window in the kitchen in metres and centimetres?

Can you estimate the dimensions of the largest window in the kitchen in metres and centimetres? What could you use to measure the dimensions of these windows? What other tools could help you?

What materials can you identify in the window frames? How old do you think the smallest window is? When do you think it was made? Are there any clues in the window that could tell us?

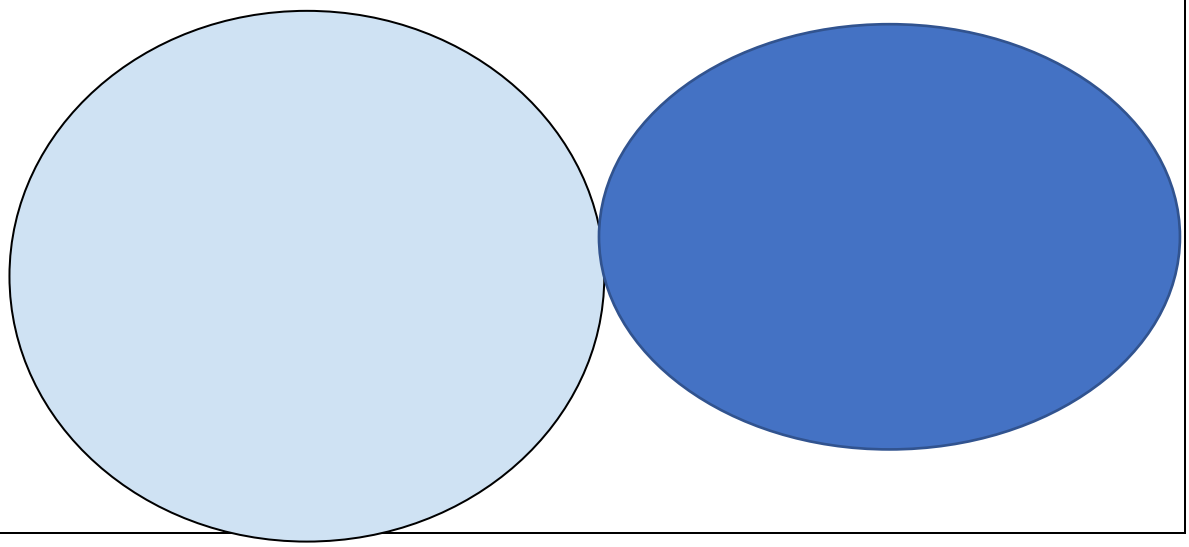
3. Stop and solve

**Level 1** GREEN

How many items in your kitchen use electricity to work? How do you know?

What things do you see in your kitchen that does not need electricity to work? Draw your ideas in the box below.

Needs electricity to work  Does not need electricity to work

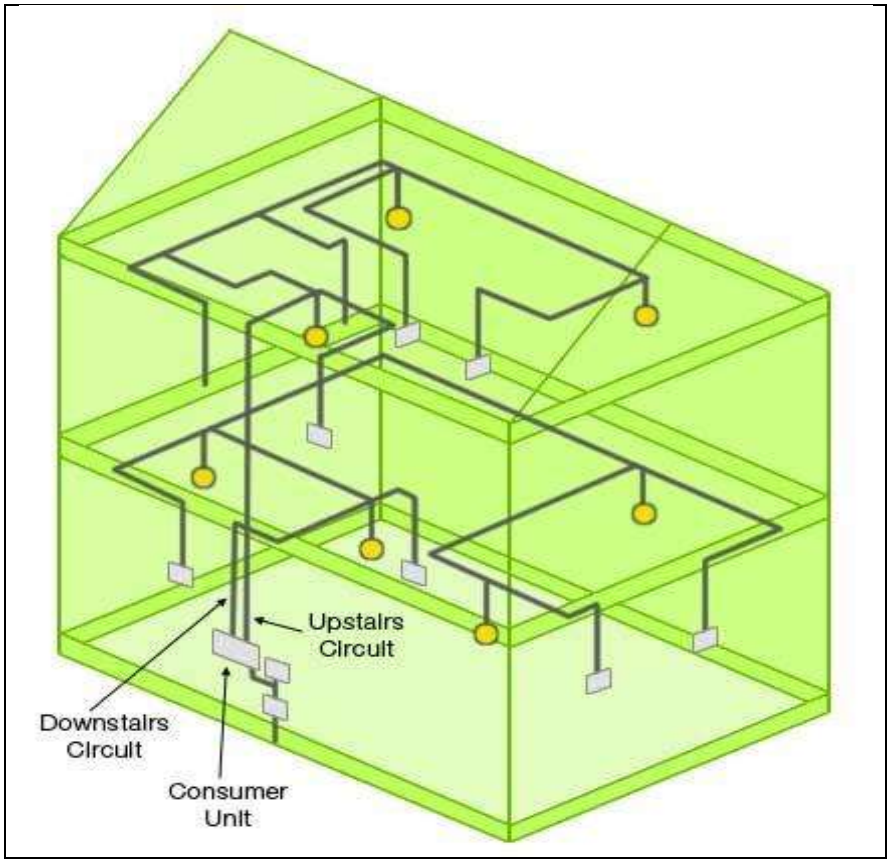


**Level 2 BLUE**

How many of these Maths terms could be used to describe the shapes found on a cooker/range/microwave? Parallel lines, rectangles, squares, perpendiculars, cuboids, spheres, hexagons.

Draw an appliance that has any three of the above terms.

Look at the light switch  . How does this turn on our light? Are there other switches in the room? What ideas do you have about how electric lights work in your home?



What do you think?

4. The centre of the kitchen

## Level 1 GREEN

Can you draw a plan of the kitchen that includes the following?

- Kettle
- Light bulb
- Windows
- Door handle
- Floor coverings
- A fridge
- A cooker
- Table and chairs

Name three manmade materials in your plan.

## Level 2 BLUE

The smallest window needs to be replaced with a new sheet of double glazing. What are the measurements needed to give to the window company to replace it? How will you record this? How much do you think this will cost? A standard sheet of double glazing per square metre costs forty euro.

The broken window means the room is now cold. What three sorts of temporary repairs could you do to seal the window and prevent a drop in room temperature? Which do you think would be best and why? How could you prove it?

Links here to other websites and sources of information to guide you in trail design

http://www.haveyougotmathseyes.com/ OR http://www.haveyougotmathseyes.com/developing-maths-trails/

https://pdst.ie/sites/default/files/MathsTrailsOverview_0.pdf

https://www.mathsweek.ie/2016/puzzles/maths-trails

www.irishtrails.ie

www.ncetm.org.uk/search?q=maths+trails

www.trails.ie