

Numeracy Volunteers

Lesson Plan:

Maths in the Real World

Class teacher delivered and volunteer supported lesson

This lesson supports children to explore the maths that's needed for jobs and hobbies in life beyond school. It will help them see the value of learning maths and understand how what they learn in school relates to everyday life.

If parents/carers are attending, the activity also aims to engage them in their children's maths learning, support positive conversations about maths between parents and children and help to build a partnership between schools and families to support children's learning.

We suggest that this lesson takes 50 – 60 minutes. Please use the slide deck to guide you through the lesson.

Main Activity: Set Up

You will need

- 5 or 6 large pieces of paper or poster paper
- Copies of each character sheet with their job and hobby on (you could print them from the slide deck)
- Marker pens and coloured pencils
- Character maths prompts/answers – one per group facilitator
- Reflective activity worksheets – one per child
- Parent and carer handouts (if they are attending)
- A laptop and screen to display the slides

To set up the activity, place one big sheet of paper and one character on to each table. Divide the children in to 5 or 6 table groups.

Main Activity: Delivery

Use the slides to guide you through the lesson. Start by introducing the aims of the session. Then invite the volunteers to introduce themselves. They will tell the class briefly about their job and a hobby they have outside of work, and where they use maths in their job and hobby.

Depending on the children's own experiences, you may wish to spend some time discussing what the jobs and hobbies on the character sheets involve. There are job profiles below and on the slides that will help with this.

Each group starts with their character and has 5 minutes to write on the big sheet how they think that character uses maths in their job and hobby. When time is up, move the characters round to the next group and repeat the activity. Each group should use the same big sheet for all characters so they don't see what the other groups have said.

Throughout the carousel, volunteers, teachers or teaching assistants and parents facilitate at the tables using prompts and ideas provided. Once each character has visited every table, the teacher or volunteer holds up each poster and goes through the ideas that have been added. Or the teacher can ask the children for ideas for each character as part of a class discussion. The posters could also be displayed on the wall for the class to look at.

Alternatively the whole class could look at the same character at the same time, in their groups, displaying them on the screen in turn, with class discussion after each character.

Maths Prompts/Answers for the Carousel Activity


The table below shows some answers but because there are so many possible uses of maths, this is not a full list. In general, any reasonable response should be encouraged.

| Name | Maths in the job | Maths in the hobby |
|---------------|--|---|
| Jamie | <p>Nurse</p> <p>Working out what amount of medicine to give</p> <p>Understanding patient information</p> <p>Taking patient readings such as blood pressure and temperature</p> <p>Understanding the probability of treatments having side effects</p> | <p>Baking</p> <p>Using complicated timings to ensure everything is ready at the right time</p> <p>Weighing and measuring ingredients</p> <p>Understanding recipes</p> <p>Multiplying up ingredients to bake products for the right number of people</p> |
| Sid | <p>Fashion Designer</p> <p>Use of patterns and angles to create great designs</p> <p>Calculating measurements to ensure clothes will fit</p> <p>Use of fractions, percentages and ratio to size clothing up and down</p> <p>Use of ratio to get the correct fabric dye colour</p> <p>Calculating cost of fabrics, thread, time and equipment work out the cost of the items</p> | <p>DIY</p> <p>Measuring materials</p> <p>Buying the right quantities at the best price</p> <p>Using shapes in design</p> <p>Understanding instructions e.g., 'place the plank parallel to the window.'</p> |
| Maryam | <p>Weather Forecaster</p> <p>Measuring the air pressure (baramoter), rain (rain gauge), sun (sunshine recorder) temperature (thermometer), wind (wind vane)</p> <p>Using computer programmes to predict the weather</p> <p>Analysing data using graphs</p> | <p>Painting</p> <p>Mixing paint colours with the right ratio</p> <p>Ordering the right size canvasses and or frames</p> <p>Understanding proportion to keep paintings life like</p> <p>Estimating the amount of paint needed to make sure there is enough of each colour</p> |

Maths Prompts/Answers for the Carousel Activity continued

| Name | Maths in the job | Maths in the hobby |
|----------------|---|---|
| Mei | <p>Video Games Designer</p> <p>Using angles, shapes and geometry in gameplay design</p> <p>Using numbers and data for coding</p> <p>Scaling and proportion to make realistic settings and characters</p> <p>Using probability to assess chances of a level being completed</p> | <p>Hosting dinner parties</p> <p>Using timings to make sure all the courses are ready at the right time</p> <p>Buying ingredients within a budget</p> <p>Getting the right amounts for the number of guests, which may not match the recipes</p> <p>Weighing ingredients, converting from pounds and ounces to kilograms</p> |
| Monica | <p>Builder</p> <p>Using ratio to mix cement</p> <p>Understanding scale of plans to ensure it's built correctly</p> <p>Measuring materials</p> <p>Project management – using time to plan the project</p> | <p>Watching football</p> <p>Understanding the league table</p> <p>Understanding statistics such as the percentage time a team has had the ball</p> <p>Working out who would win the league on the last day with different results</p> <p>Keeping her fantasy football team within budget</p> |
| Michael | <p>Hairdresser</p> <p>Understanding shape</p> <p>Using measurements for example, the customer would like 2 inches trimmed</p> <p>Mixing colours and dyes using the correct ratio</p> <p>Making appointments and planning enough time for each customer</p> | <p>Playing board games</p> <p>Keeping score in Scrabble</p> <p>Using money in Monopoly – knowing when to re-mortgage a property, whether to buy at auction</p> <p>Understanding probabilities – what are the chances you would roll a double</p> <p>Using coordinates in Battleships</p> |

Individual reflective activity




Name: _____

Maths in My World

Tell us about a hobby or something you do regularly and how it involves using maths?

Ideas could include - baking, shopping, getting to school, going on a day out with friends or family or playing a sport. Think about things like measuring, counting, telling the time, counting money, reading a bus timetable.

Design a poster to show your activity and how you use maths.



Discuss on your table and with your helpers - what would happen if you didn't use maths when you are doing this activity?




Following the carousel activity, children are asked to complete the individual reflective activity 'Maths in My World' about their own hobby or something they do regularly and how they might use maths in these. This could be given out as homework if lesson time is limited.

Parents or Carers




If parents and carers are attending, please give them a handout to take away.

Our Characters

Choose five or all six, depending on the number of groups and tables you have in the classroom. We will let you know the job title and hobby of your real-life volunteer characters prior to the session.

| Name | Job | Hobby | What does the job involve? |
|--|--------------------|----------|--|
| Jamie  | Nurse | Baking | <ul style="list-style-type: none"> Cares for people suffering from illnesses and injuries Checks and gives medicines Helping with x-rays and blood tests Watching and writing down the patient's progress |
| Sid  | Fashion Designer | DIY | <ul style="list-style-type: none"> Researching current fashion trends Developing designs for new products Selecting fabrics, patterns and colours Creating original clothing, accessories and footwear Selling to suppliers |
| Maryam  | Weather Forecaster | Painting | <ul style="list-style-type: none"> Studying the weather and climate Collecting data from the land, sea and atmosphere Forecasting the weather |

Our Characters - continued

| Name | Job | Hobby | What does the job involve? |
|---|---------------------|------------------------|--|
| Mei  | Video Game Designer | Hosting Dinner Parties | <ul style="list-style-type: none"> • Produces exciting new games • Designs games for different consoles • Considers and plans in detail every element of a new game |
| Monica  | Builder | Watching Football | <ul style="list-style-type: none"> • Constructs, maintains, repairs and renovates buildings • Follows rules to make sure buildings are safe • Makes sure walls are built straight across to ensure they are level and stable • Installs electricity, water and gas connections |
| Michael  | Hairdresser | Board Games | <ul style="list-style-type: none"> • Manages hair appointments • Shampoos, cuts, colours and styles hair • Talks to the customer about what style they want • Recommends hair products to customers |