STEM Clubs
Inspiring and igniting imaginations

STEM Clubs Week
22-26 June 2020

Activity Booklet

Welcome!

Thank you for your interest in STEM Clubs Week 2020.

Enclosed in this booklet you will find guidance on how to deliver each of the activities we are presenting as daily challenges. Each relates to the day's theme: clean air, water and sanitation; sustainable energy, sustainable materials, sustainable food and sustainable design and construction.

As the majority of students remain at home, the activities have been adapted for the home environment using generally available items. Please substitute materials and resources according to what you have available.

Each activity suggests ways to differentiate them according to the age and ability of the students. There are recommendations for extension activities and each can be adapted for younger and older students. The activities help to develop key skills in young people such as problem solving and team working and are a great way for families to work together.

We hope you enjoy taking part, remember to tweet pictures of your solutions tagging in #STEMClubsWeek. We would love to see what you produce and hear your ideas for other activities.

Don't forget to email in your designs for the STEM Clubs Week competition, you can find out more about it on the STEM Clubs Week web page.

If you have any questions or queries, please feel free to email us at: STEMClubs@stem.org.uk

Enjoy the week!

The STEM Clubs Team

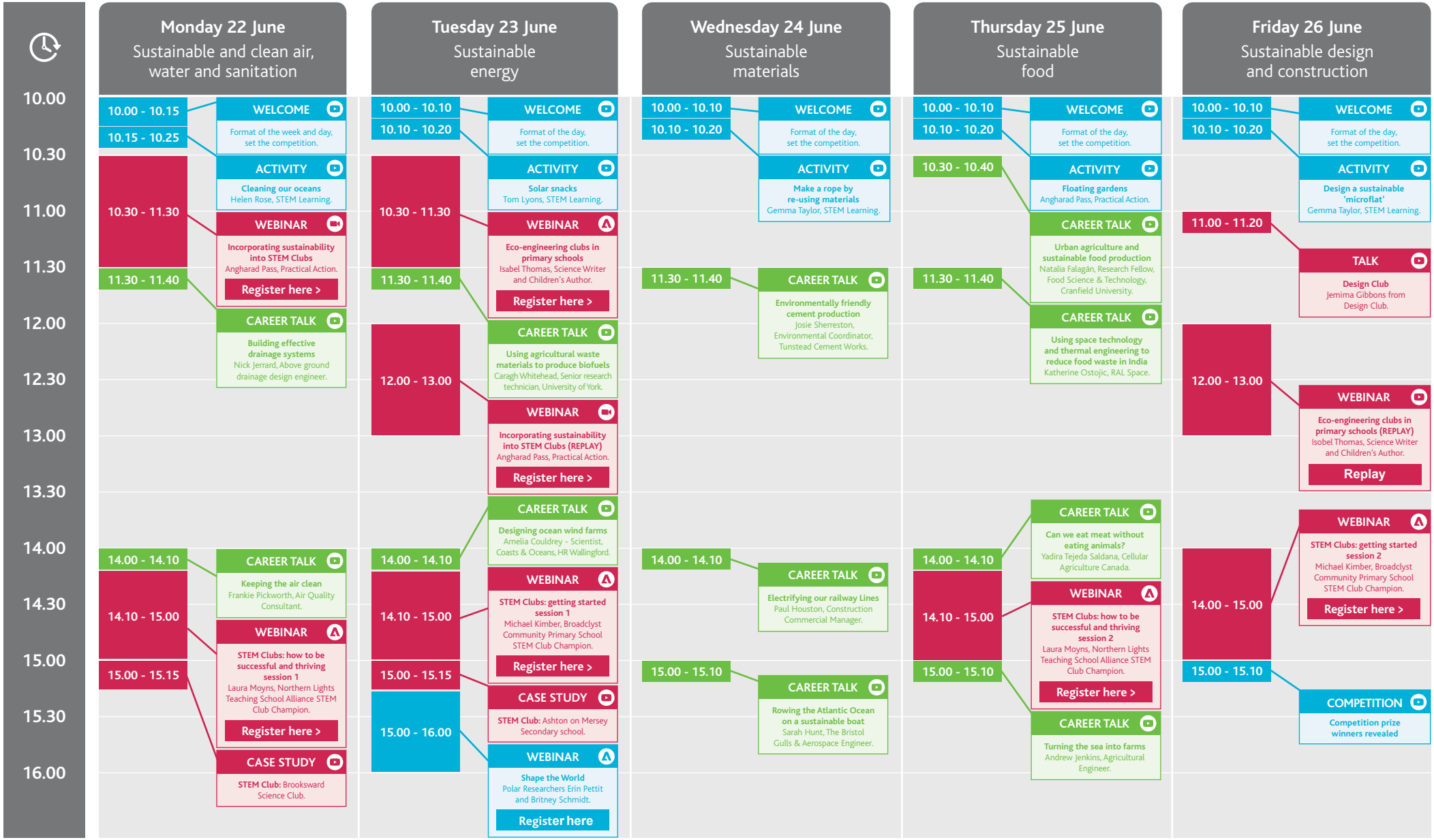
STEM Learning

STEM CLUBS

Contents

STEM Clubs Week timetable

Monday 22 - Friday 26 June



Suitable for: Everyone | STEM Club leaders | Families

Share your activities with @STEMClubs on Twitter, tagging #STEMClubsWeek.

Watch on: YouTube Zoom Adobe

Activity 1:

Cleaning our oceans

Club Leader Notes

The activity is suitable for 7-16 year olds

Objective

Simulate a small-scale oil spill and investigate methods of cleaning it up by creating a boom to absorb and contain the oil.

HEALTH AND SAFETY:

Always consider the risks that can be associated with activities. Take precautions suitable for the age and ability of the students involved.

TOPIC LINKS

- Design and technology: exploring properties of materials
- Science: visualising chemicals in oil and observing the effect of dispersants

ESSENTIAL SKILLS SUPPORTED

Listening, presenting, problem solving

TIME

30 minutes - extend the activity by creating different booms and exploring techniques to contain the oil

RESOURCES AND PREPARATION

- materials for the booms:
  - nylon tights - 1 leg or old sock
  - paper towels
  - cotton balls
  - feathers
  - wool - natural or knitting
  - foam makeup sponges
  - tissues / lavatory paper
  - other absorbant materials
- experiment materials:
  - cooking / vegetable oil (50-100ml)
  - food colouring (optional)
  - glass tumbler
  - spoon to stir
  - water (in a sink or large deep tray etc.)
  - washing-up liquid
  - glass bowl
  - paper towels
  - Extension: strips of cardboard or straws

DELIVERY

1. Explain that a lot of the energy we use in our daily lives comes from fossil fuels (oil, gas and coal), but the transport of fossil fuels has led to oil spills in our oceans. Oil spills are bad for marine environments, animals, and even humans.
2. Obviously it's vitally important that we remove oil from these marine environments. There are many different ways we can do this, and some measures are more effective than others.
3. Describe how booms are used to clean up oil. In Useful links below, there are two interesting videos about how booms can be made out of hair and nylon.
4. Tell students that they will use a model to simulate an oil spill and its clean-up.
5. Guide students as they work through the student guide.
6. After the practical, ask students the following comprehension questions:
   - which of the absorbent materials was able to absorb the oil the fastest? Rank them from worst to best and explain your reasoning
   - you probably noticed that the oil and water don't mix. Did this make it easier or harder to remove it from the water
   - the food colouring in this experiment represented the chemicals that can be found in crude oil. Did anything happen with these chemicals in the oil during the experiment? What do you think this means?

Activity 1:

Cleaning our oceans

Club Leader Notes

DIFFERENTIATION IDE

Support: students simulate a small-scale oil spill and investigate the effectiveness of two different oil clean-up efforts.

Challenge:

- students can independently investigate how the amount of oil affects the clean-up strategy that works best. They can explore how doubling the oil spill affects the spread of the oil slick over the surface of the water. How does it affect the amount of time required to contain it

HEALTH AND SAFETY:

Always consider the risks that can be associated with activities. Take precautions suitable for the age and ability of the students involved.

EXTENSION IDEA

1. Add a dispersant (washing-up liquid) to break up the oil "slick" surface into little droplets and ask the students how effective this would be in a clean-up. Dispersants contain molecules with a hydrophilic end (the “head”) and hydrophobic end (the “tail”). These molecules attach to the oil, reducing the interfacial tension between oil and water, breaking up the oil slick. See more information in the Useful links section.

2. This topic can be further extended by including the clean-up of wildlife (e.g. birds) by dipping a feather in the oil and cleaning it with water or cleaning it with the dispersant.

TIPS

- **the activity works best if you create at least 3 booms**
- **fill each boom with a different absorbent material, to work out which is the most effective**
- **this activity can be messy. Prepare enough paper towels and soap for clean-up**
- **all oil waste should be placed in refuse bins, only minimal oil remaining on surfaces/objects should be washed off with detergent and disposed of down the sink as it can separate out in the sewerage system. Ideally wipe most residue with paper towels and place in bin**

Useful links

This activity is taken from the STEM Clubs activity resource: How can we live smarter? The resource pack is free to download and contains project ideas on how technology and innovation improve the quality of our lives and the world we live in.
https://www.stem.org.uk/resources/elibrary/resource/464499/how-can-we-live-smarter

10 impressive innovations for cleaning up oil spills developed since the Gulf disaster
www.treehugger.com/slideshows/clean-technology/10-impressive-oil-spill-clean-technologies-developed-past-five-years/

Nature: The science of dispersants
www.nature.com/news/2010/100512/full/news.2010.237.html

YouTube video: Making a boom using hair and nylon nets
www.youtube.com/watch?v=aHuWyFVo62o

YouTube video: Hair boom vs. conventional boom demo
www.youtube.com/watch?v=W68L53WkIAw

Activity 1:

Cleaning our oceans

Student Activity Sheet

Your challenge

Oil spills are pretty nasty. They can harm the environment, animals and even people living nearby. It's therefore vital that we keep the seas clean! Floating objects called booms (like a floating sock) help us today, but what materials are best to use and are there even better methods we should be using in the future?

YOUR TASK **Simulate an oil spill and work out the most effective way to clean it all up again - what is the best material to be used as a boom?**

WHAT YOU NEED TO DO

1. Take the tights leg and carefully cut off the ankle and foot section. Cut four 5-10cm lengths off the tights leg. Tie a knot in one end of each segment.
2. Fill each segment of the tights with one of the absorbent materials to create a small sausage shape - try not to stretch the tights. Do this for each material until you have 3-4 booms of similar size, shape and density. Tie off the open ends.
3. Measure out 50-100ml of vegetable oil into a glass. Add 5 drops of food colouring - if you have it - it will make it easier to see the oil. Mix with the spoon.
4. Half-fill the large container with cold water and pour 50ml of the oil mixture into the centre. Record your observations. Is there one big oil puddle or separate droplets? Does the oil spread out quickly? Does it sink or float? What happens if you gently blow on the surface?
5. **Phase 1**

   Place one of the booms in the oil and water. Move it around gently to soak up the spill. Squeeze out the boom into the bowl and place back in the water to remove the remaining oil. Record all of your observations. How effective was the boom? How long did it take to remove 50%, 75% and 100% of the oil?

   Repeat the experiment with each of the booms recording your observations for comparison.
6. **Phase 2**

   What happens if you contain the oil in some way?

   a) Repeat the experiment with the booms but use straws or cardboard to form barriers to stop the oil from spreading. How effective is this method? Observe and compare your findings.

   b) Repeat the experiment but tie three of the booms together. Try containing the oil with the three connected booms and use a fourth to soak up the oil. How effective is this method? Observe and compare your findings.
7. Present your findings and compare results for each experiment. Discuss how you could improve the booms to make them more effective and cost efficient.
8. **To clean up:**

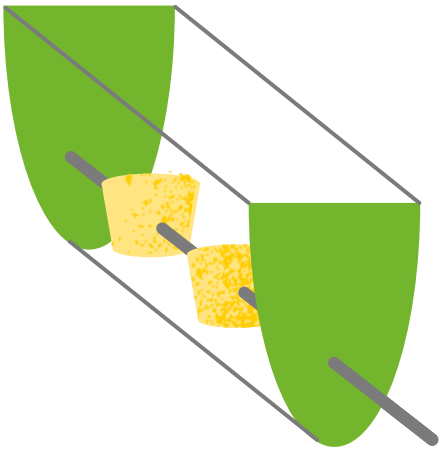
   Throw away the booms in the bin along with any other materials contaminated by the oil. Use paper towels to absorb as much of the oil as possible and throw away. Mix the remaining water with washing up liquid and carefully pour down the sink. Thoroughly wash the equipment with hot soapy water to remove the oil residue.

FUN FACTS

1. After the Gulf of Mexico oil spill, a non-profit organisation called "Matter of Trust" used human and animal hair stuffed into nylon stockings as an absorbent to contain and soak up the oil. They obtained the hair from hairdressers and pet stores and sent hundreds of thousands of pounds of hair wrapped in recycled nylon stockings to help clean up the pollution.
2. Scientists have investigated other ways for us to effectively and quickly clean up oil from our oceans. DNA research in one particular investigation suggests that bacteria could be used to eat the oil, cleaning the water. By understanding how to support these natural occurring microbes, we may also be able to better manage the aftermath of oil spills.

Activity 2:

Solar snacks



Club Leader Notes

The activity is suitable for 7-16 year olds

Objective

Students investigate how parabolas can focus light to heat marshmallows in a simple solar cooker. This is one way that survivors could cook in the powerless, dark world of the zombie apocalypse.

HEALTH AND SAFETY:

Always consider the risks that can be associated with activities. Take precautions suitable for the age and ability of the students involved.

TOPIC LINKS

- Maths: parabolas, circles, prisms
- Physics: energy, light
- Design and technology: functional solutions to design problems

TIME

45 minutes

RESOURCES AND PREPARATION

This activity works best on a sunny day. On a cloudy day, perform the experiment with a halogen desk lamp. This could perhaps also be used as a demonstration on a sunny day.

- printed copies of the parabola template
- A4 corrugated card (four sheets per group)
- A3 thin card (one sheet per group)
- aluminium foil
- glue sticks, tape
- long bamboo or wood skewers
- marshmallows
- probe or infra-red thermometer
- transparent acrylic sheet (optional)
- halogen desk lamps for use on a cloudy day [caution: hot]
- protective gloves

DELIVERY

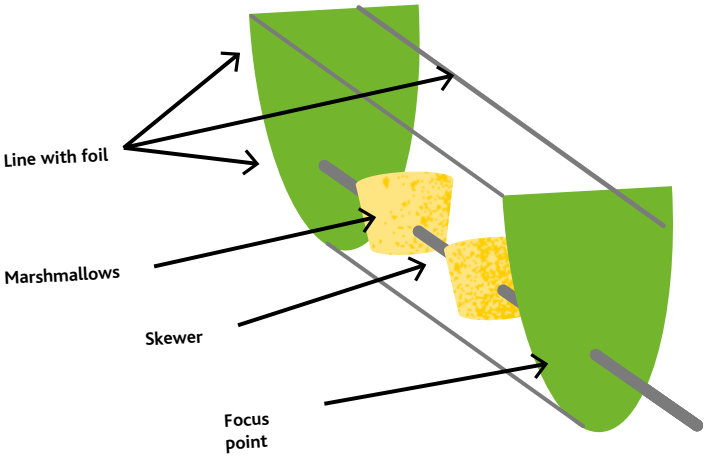
1. Introduce the scenario: there is no electricity or gas available to cook with and the zombies are beginning to associate smoke with humans. The survivors need to find ways to heat food and water that won't give away their location. One option is solar cooking.
2. Discuss which STEM roles might help in this situation: optical engineer, thermodynamics scientist, energy engineer, food scientist etc. Students can take on these roles if they wish.
3. If time permits, briefly introduce parabolas, explaining that they are found in torch and car headlights to direct the light.
4. Guide teams as they carefully follow the step-by-step instructions to build a small parabolic solar cooker. If using outside, students can optionally use transparent acrylic sheets as a top cover, which helps trap heat. do NOT try this if using halogen lamps.
5. Test the parabolic solar cookers with marshmallows and thermometers. See how fast the marshmallows melt, and/or what final temperature they reach.

Activity 2:

Solar snacks

Club Leader Notes

The activity is suitable for 7-16 year olds



TIPS

- Use the foil shiny side out and take care not to wrinkle it when gluing to the tin card.
- Don't forget to coat the two end formers in foil as well.
- It's important that as much light as possible can get below the marshmallows, which should be in small enough pieces so that they don't touch the foil.
- Angle the cookers so that they point at the sun or the lamp being used.
- If performing this experiment inside with halogen lamps, make the solar cookers shorter than the length of the long wooden skewers or just put a marshmallow directly under the lamp.

Top Tip

The red dot on the parabola template is the focus – the axis on which the skewer will go and on which the marshmallow will need to stick. Light needs to reflect off the parabola onto the marshmallow and that's vital.

DIFFERENTIATION IDEAS

Support: Make one model for students to copy. Pre-cut end formers from corrugated card, ready for groups to use.

Challenge: Ask teams to also make cookers based around hemispheric end formers and compare their performance. Discuss why the parabola works better: the shape focuses the light onto the axis, where the marshmallows are positioned. A hemisphere can't focus the light in the same way.

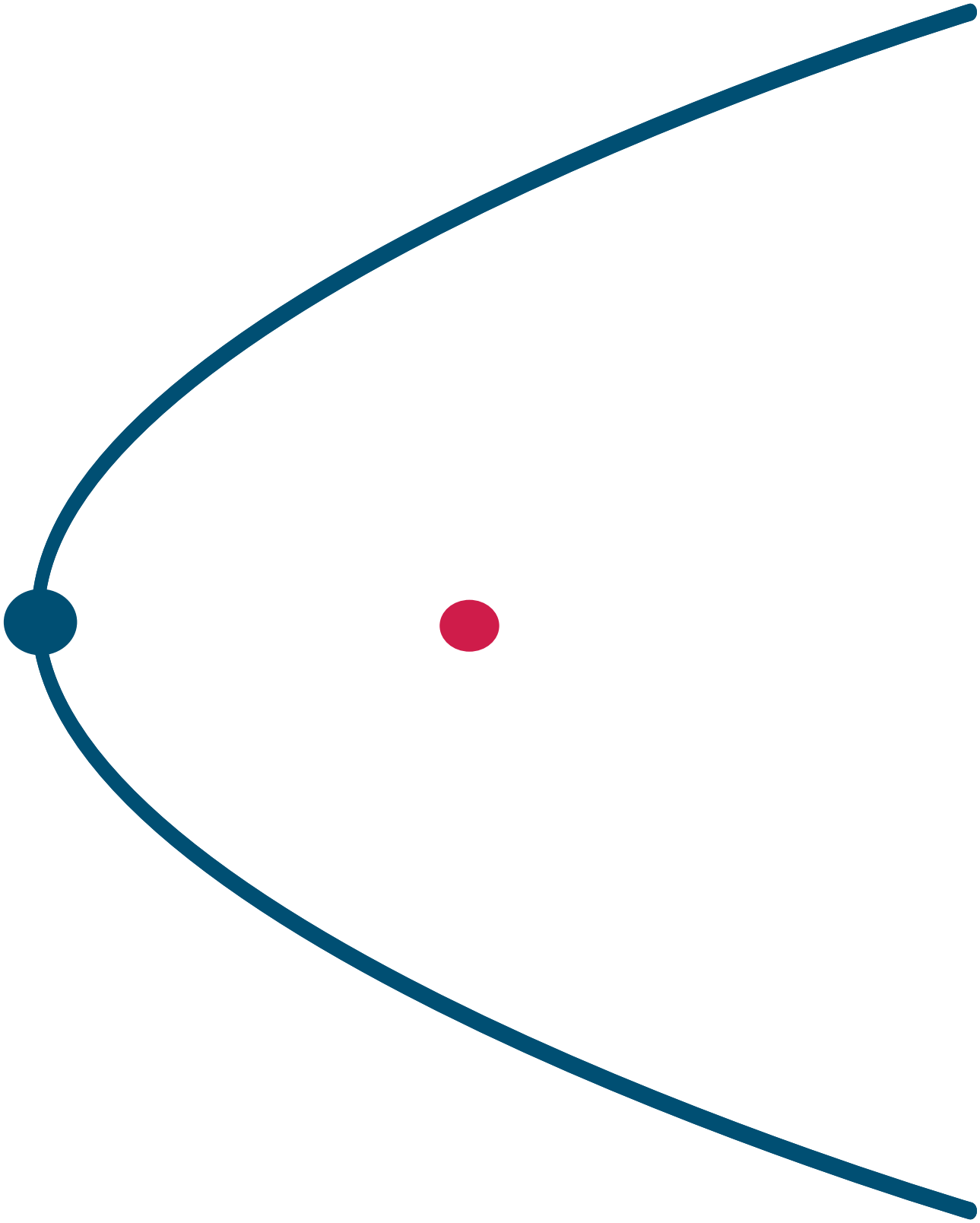
EXTENSION IDEAS

- Students could research and build other forms of solar cookers.
- Students can research 'rocket' stoves, which drastically reduce the smoke produced by burning wood. Why are rocket stoves important for people's health in less economically developed countries?
- Build a large solar cooker using plywood and cook hotdog sausages or other snacks outdoors.
- Research other foods suitable for cooking on a long skewer, like vegetable or meat kebabs or campfire bread twizzles.

Useful link

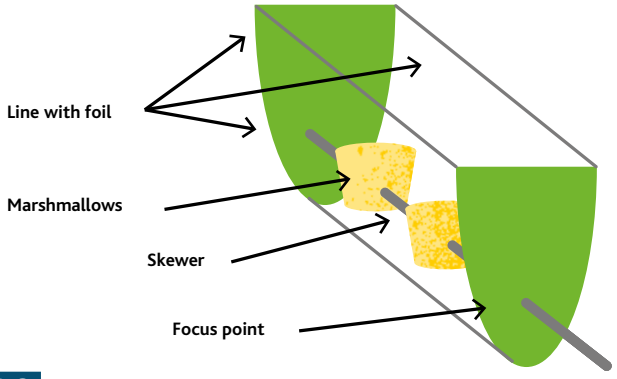
This activity is taken from the STEM Clubs activity resource: Can you survive a zombie apocalypse? The resource pack is free to download and contains project ideas that will stimulate creative thinking. The activities whilst fun, have a real world context within them.
https://www.stem.org.uk/resources/elibrary/resource/445428/survive-zombie-apocalypse

Parabola template



Activity 1:

Solar snacks



Student Activity Sheet

Briefing

After a few weeks in the zombie apocalypse, there's no gas or electricity left for cooking. What's more, the zombies have learned that smoke and fires mean there are humans nearby to bite! You need to find a way to cook food that doesn't give away your location.

YOUR TASK

Build and test a parabolic solar cooker.

WHAT YOU NEED TO DO

1. Glue two pairs together to create two double thickness parabolas.
2. Use a skewer to accurately create a hole at the focus points.
3. Use the parabola template to carefully cut four parabolas from corrugated card.
4. Use the glue stick to carefully cover one side of the thin card, and one side of each parabola, with foil. Make sure the shiny side faces out. Try not to create wrinkles.
5. Fold the thin card around the parabolas and tape it in place to create your solar cooker. Make sure the foil is on the inside!
6. Poke a skewer through the focus point at each end and make sure the skewer is straight in the cooker.Image at the top omits one side of the card/foil reflector. (It wraps all round the parabola at each end to form a trough)
7. It's time to cook! Load one or two marshmallows onto your skewer. Make sure they don't touch the foil, so light can reflect onto them.
8. Angle your cooker to face the sun, or if inside, a halogen lamp.

NB: Take extra care when using a halogen lamp as they can generate a lot of heat and you could burn yourself. Use protective gloves and wear protective eyewear.

FUN FACTS

1. If you throw a ball, the trajectory it follows through the air is a parabola.
2. Any ray of light that's parallel to the parabola's axis of symmetry will be reflected onto the focus point. That's why parabolas are used to focus torch or headlight beams, and are also used in satellite dishes.
3. The simplest equation for a parabola is $y = x2$.

Activity 3:

Need a rope?

Club Leader Notes

The activity is suitable for 7-16 year olds.

Objective

In this activity, students reuse a plastic carrier bag, to make a strong rope. Students explore how they can braid strips of plastic and join them together to form a strong rope and then test the rope to see how strong the rope is!

TOPIC LINKS

- Design and technology: structural elements to achieve functioning solutions
- Engineering: manipulating materials to change their strength

TIME

30 minutes

RESOURCES AND PREPARTION

- scissors
- bin liners/plastic bags
- ruler
- marker pen weights
- (tinned food) hook or
- coat hanger

DELIVERY

1. Ask students to consider the properties a good piece of rope has.
2. What could they build rope from that would help the environment? What would they need to do to make rope? What could they make it out of? Explain that ocean plastic is a big problem – and plastic even washes up on the most remote of islands.
3. Allow students some time to look at the plastic bags and discuss how they could use them to make the strongest possible rope.
4. Assist students as they follow instructions on the student guide to make a rope.
5. Discuss how students might test how strong the rope is.
6. Quantify how good the rope is by using suitable items to use as weights to see how much the rope can hold.
7. Encourage students to research alternative twining or braiding techniques to test strength and durability.

EXTENSION IDEAS

Try other suitable materials you may have available, such as old cotton t-shirts, or tights.

Consider how reusing these materials can help protect the environment, what other uses could be found for materials?

HEALTH AND SAFETY:

Always consider the risks that can be associated with activities. Take precautions suitable for the age and ability of the students involved.

TIPS

- It is easier to follow the twining steps by watching the process. See the Useful links for a video demonstrating the process.

DIFFERENTIATION IDEAS

Support: demonstrate the way to twist the plastic strips back on itself to strengthen the rope.

Challenge: show students how to twist the strips into a rope but allow students to create their own ways to strengthen their rope. They can then devise a test to see whose rope is strongest.

Useful links

This activity is taken from the STEM Clubs activity resource: Could you survive on a desert island? The resource pack is free to download and contains project ideas on how STEM subjects can be used when things we take for granted are no longer available, helping to recycle and reuse products.

https://www.stem.org.uk/resources/elibrary/resource/445426/survive-desert-island

- **You Tube video about making rope ut of plastic bags: https://www.youtube.com/watch?v=3TpN4WT61hU**
- **YouTube video about making rope out of coconuts: https://www.youtube.com/watch?v=U-Q0NVX2nt0**
- **Making rope from dead plants: http://www.instructables.com/id/Make-rope-out-of-dead-plants----with-no-tools/**

Activity 3:

Need a rope?

Student Activity Sheet

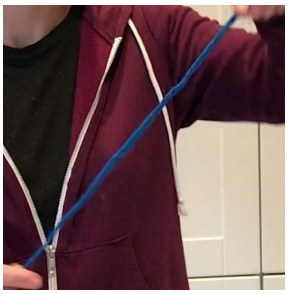
Briefing

Want to build a raft or a shelter? To do this, you will require one important thing… rope! But how can you make it with such limited resources?

YOUR TASK

Reuse an old carrier bag to make a rope. It will help protect the environment too!

1. Take a carrier bag and cut the plastic bag into long strips.
2. Take three strips and tie them together with a knot at one end. Take the knotted end and secure safely so that you can braid your rope, (watch the video demonstration)
3. Devise an experiment to test the strength of your carrier bag rope. Think about:
   - what apparatus you could use to quantify how strong each rope
   - is how to apply weights to the rope
   - what happens to the rope
   - how much weight it can hold before it breaks.
4. Now think about how you could make a stronger rope. Decide what you could change and try your test again.
5. Record your observations and results



FUN FACTS

1. More than half the rope manufactured today is used in the fishing industry.
2. Egyptians were one of the first people to develop rope. They used water reeds, grass and even camel hair! They needed the ropes to pull the heavy stones needed to build the pyramids.
3. Cable is simply a type of rope, it's just made from iron or steel fibres rather than coconut husk! Metallurgists are a type of materials engineer who specialise in creating alloys that make the perfect rope for its purpose.

Activity 4:

Floating Garden Challenge

Download the full challenge documents from the Practical Actions website:

https://practicalaction.org/schools/floating-garden-challenge/#resources

Objective

To design and build a model structure that will enable farmers to grow crops even in an area that may become flooded.

Delivery

1. First visit the Practical Action website using the link above.
2. Then download the activity resource pack, there is guidance for educators, families and student activity sheets.
3. The challenge looks at global flooding issues, particularly the difficulties experienced by farmers in Bangladesh.
4. Using a variety of materials design and build a solution for the famers that will enable crops to survive and flourish when the flooding occurs.
5. When you have successfully designed and built your solution, download the certificate from Practical Actions website.
6. Share your designs with the STEM Clubs Programme and Practical Action

   Twitter: @STEMClubs
   Twitter: @PracticalAction

Practical Action

We help people find solutions to some of the world's toughest problems – made worse by catastrophic climate change and persistent gender inequality.

We do things differently so answers that start small can grow big – bringing people together in bold collaborations, combining knowledge with innovation to change the systems that keep people poor and vulnerable.

We work with communities to develop ingenious solutions for agriculture, water and waste management, climate resilience and clean energy access. Then we share what's proven to work with others, so many more people can change their world.

Find out more and how you can help on our website.

With thanks to Practical Action for supporting STEM Clubs Week.

Practical ACTION

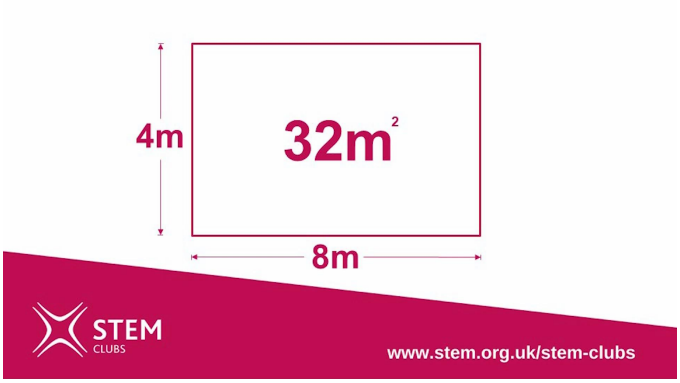
Activity 5:

Microflats

HEALTH AND SAFETY:
Always consider the risks that can be associated with activities. Take precautions suitable for the age and ability of the students involved.

Club Leader Notes

The activity is suitable for 7-16 year olds.



Objective

In this activity discuss and sketch/mock up a microflat – a small, flexible living space where objects can be converted from one purpose to another.

TOPIC LINKS
Design and technology: designing a living space

ESSENTIAL SKILLS SUPPORTED
Listening, presenting, problem solving

TIME
30-60 minutes

RESOURCES AND PREPARATION
- paper squared if possible (1cm squares might be easy as each square can represent 1m2)
- pencils
- pens, ruler
- cardboard or construction paper
- desktop, laptop, tablet etc. (if available)

DELIVERY

1. Introduce the topic of the growing population of humans on Earth. Ask the students what they think might happen if the trend continues. Will we have enough food? Will we have enough space?
2. Ask students to research differences in living spaces in rural areas versus cities with high population density, such as Singapore, Mumbai or Manila. How big is a typical house or flat? How does that compare to the students' own city or town?
3. Show the students examples of multi-functional furniture. How would thismake very small living space more homey and comfortable? Now set the challenge: imagine they are an interior architect at a successful company. A new client has asked them to design a microflat that will be comfortable to live in. (A microflat is typically defined as a one-room living space no more than 32 square metres.)
4. They should think about what kinds of things they need in their homes – what is a necessity, and what is a 'nice to have'? They should create a list of requirements that a microflat would need to have.
5. Once they are happy with their list of requirements, allow students to discuss amongst themselves some ideas for how they could design the space to accommodate everything on their list. You could also ask them to share with the whole class.
6. Explain that they will sketch and mock-up their own microflat ideas.
7. Guide students as they work through the student guide. Once their designs are complete, they can present them to class as if they were proposing the plans to their client. They could then revise their designs based on their classmates' feedback.

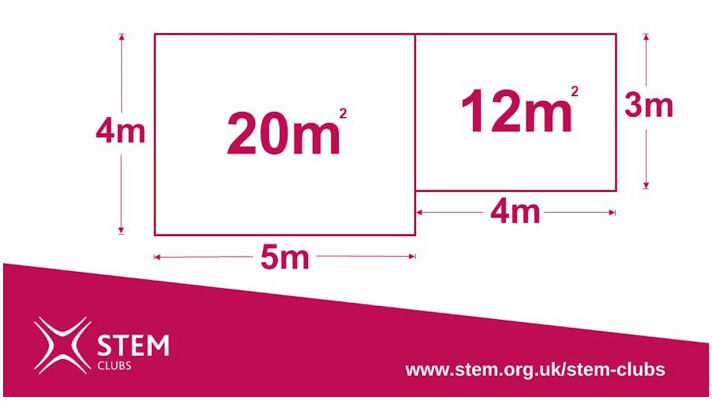
TIPS

- Give students size options, such as:
  - easy - "large" 32m² home
  - difficult - 14m² home
- You could tell students that their client is very wealthy and money is no object, or you could set them a budget not to exceed.
- Clarify that each square on their squared paper is one square meter, and allow them to experiment with the overall shape of the flat before working out the furniture placement.

Activity 5:

Microflats

Club Leader Notes



DIFFERENTIATION IDEAS

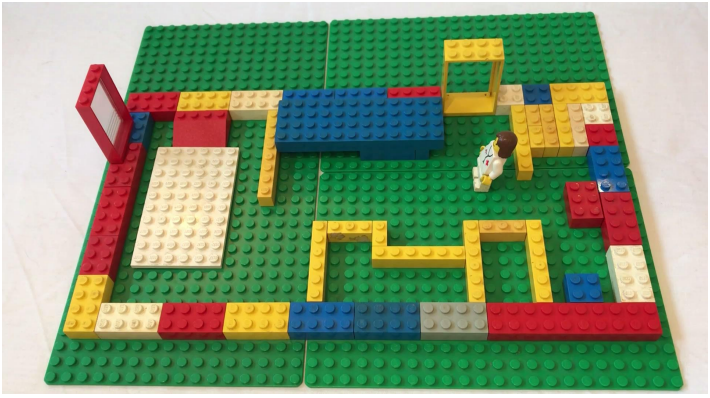
Support: print out and provide several example designs, including multi-functional furniture and discuss the various designs and how they work.

Challenge: if students are happy with their design, let them work out their design in cardboard (the squared paper can be stuck to the cardboard to help them with the measurements, while still adding the 3D aspect).

If computers are available, let students mock up their own home on the computer using online home design websites (a free example demo – see Useful links below).

EXTENSION IDEAS

1. Finish the activity with a discussion about preferences and opinions.
   - can any of the students picture themselves in a micro flat in a big city like New York or Tokyo? Why, why not
   - can they picture a future where most of the population might be forced to live in micro flats
   - will the human population grow to the point where this is necessary
2. students could create a miniature model of their microflat



Useful links

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https://www.stem.org.uk/resources/elibrary/resource/464499/how-can-we-live-smarter

Planner 5D: free demo of a home design tool
https://planner5d.com/

Makespace. A psychologist discusses why micro-apartments are popular in large cities
https://makespace.com/blog/posts/why-are-micro-apartments-popular/

The New Yorker: Are Micro-Apartments a Good Solution to the Affordable-Housing Crisis
www.newyorker.com/business/currency/are-micro-apartments-a-good-solution-to-the-affordable-housing-crisis

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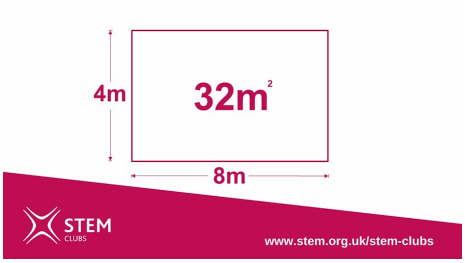
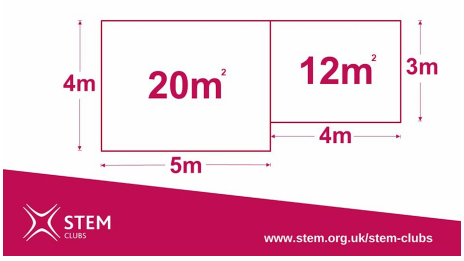


Activity 5:

Microflats



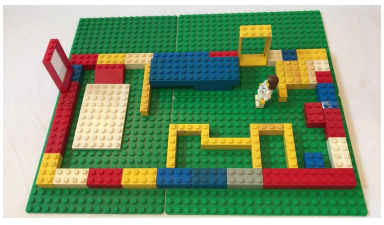
Student Activity Sheet

Your challenge

Imagine you're in charge of designing comfortable living spaces in a very crowded city. The population is high, so there's not a lot of space available. A new client has come in to ask you to design their microflat. The space is very small, but the client wants a comfortable place to live. Everything inside needs to be considered very carefully so no space is wasted!

YOUR TASK

Think carefully about how you can make use of a very small space, and design a multipurpose microflat! Start with designing a 32m2 space in a shape of your chosing.



WHAT YOU NEED TO DO

1. First, think about what your client will need in their living space. What is absolutely necessary and what is nice to have but not essential? It may be helpful to create a backstory about your client to help you decide. For example, a client who loves cooking might need more kitchen space. Make a list or ranking of what the space must include.
2. Find out how much space is available in the microflat.
3. Think of the shape of your flat. Sure, you can start with a square, but why not an L-shape? Tip: to keep it simple, stick to using square walls rather than circles.
4. Mind map what type of furniture you want to include in your home. Think about what you need as an absolute minimum. Beds that double as tables when folded up? A TV which can be folded upwards and hang up on the ceiling? Moveable walls that slide along the floor when they need to be moved out of the way? Make a list!
5. Draw the shapes of your furniture, sticking to realistic sizes. Sketch important shapes and colour them in before cutting them out.
6. Fill up your flat with your cuttings. Try to find the best fit for your clever furniture to make your house comfortable and original.
7. Once your design is complete, present it to the rest of the group who will act as your client. What is their feedback? Are there any changes you might want to make to your plan?

FUN FACTS

1. While they're not for everyone, microflats actually help you save money and energy (which reduces your carbon footprint, and is good for the environment!).
2. Perhaps the greatest advantage of having a much smaller living space is that it also significantly reduces the time you need to spend on cleaning.

Notes

STEM Clubs Programme, led by STEM Learning

Achieving world-leading STEM education for all young people across the UK.

STEM Clubs week would not have been possible without the help and support of the many individuals who have contributed their time and energy to the activities, webinars, interviews and training sessions - thank you.

The STEM Clubs Programme offers free support and guidance to UK schools to help them start, sustain and develop a STEM club. The support includes free activities, resources, CPD opportunities and access to STEM professionals to support your club.

Find out more on the STEM Learning website: www.stem.org.uk/stem-clubs