

# STEM CONSULTATION

## Girls and Young Women

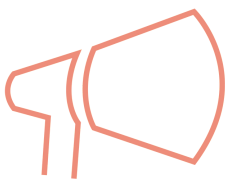
### Welcome

Thank you for participating in our consultation! A 2021 WAGGGS survey revealed that many of our Member Organisations are interested in WAGGGS supporting them to deliver programmes and/or advocacy campaigns on Science, Technology, Engineering and Mathematics (STEM).

**What and why** We also know that girls and young women want us to support them by providing relevant life-skills for the future. STEM knowledge, skills and mindsets are an important part of this. This consultation aims to help us understand what girls and young women want from Girl Guiding and Girl Scouting on this subject.



# 01



# 02

**What to do**

**Step 1)** Read through the activities and prepare your team. The Leader's guidance notes should help with questions you may have.

**Step 2)** Run the consultation activities with your group, recording their feedback into the worksheet as you go along. You will need about 1 hour.

**Step 3)** Feedback: please [report your findings online here](#). If you are unable to do this, you can scan in or take a photograph of your worksheet and send it to [gina.mills@waggs.org](mailto:gina.mills@waggs.org)

# THE ACTIVITIES

## STEM CONSULTATION



01

What is STEM?

02

How does STEM make you feel?

03

STEM jobs

04

The way the world is now

05

What's holding us back?

06

Break down the barriers!

07

What could we do?



# ACTIVITY ONE: WHAT IS STEM?

## What does WAGGGS want to know?

We want to see how much understanding girls have of STEM topics right now.



## What you need

4 large pieces of paper (e.g. flip chart) and pens.

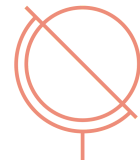
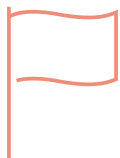


## What to do

1. Write a different title at the top of each piece of paper: Mathematics, Science, Engineering, Technology.
2. Place the papers around your meeting space with a few pens.
3. Split the group into four small groups
4. Ask each group to run to one of the papers. Ask them each to read out what is written on theirs. Explain you would like them to work as a team to write what they think this word means/what it is.

**Hint: to help them, you could ask “What kinds of things would you study in Mathematics, Science etc?” “What things come to your mind when you hear these words?”**

5. Give girls 5 minutes at the first station. After 5 minutes ask them to move to the next one to add their thoughts, and so on until each group has visited each. You could give less time at the next stations as they are adding to other groups' work. If you are short on time, groups could visit just two stations each.





# ACTIVITY ONE: YOUR RECORD

Please record the words the groups wrote below under each heading.

Science	Technology	Engineering	Mathematics

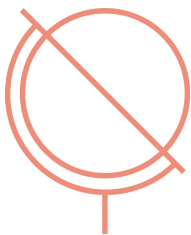
# STEM DEFINITIONS

Definitions of science, technology, engineering and mathematics  
(with help from the Cambridge Dictionary ([dictionary.cambridge.org](https://dictionary.cambridge.org)) and Indeed ([indeed.com](https://indeed.com)))

## Science

Careful study of the world around us. Watching, measuring, and doing experiments, and developing theories that explain the results of these activities.

Science subjects include biology, chemistry, medical science, physics, computer science, psychology and the social sciences.



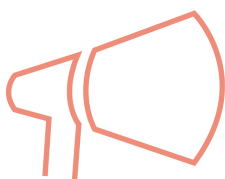
## Technology

Using the knowledge we get from science for practical uses, including for communications, power and energy, manufacturing (making things), food, medicine and transport.

## Engineering

The design or building of machines, engines, electrical systems, or large structures such as roads or bridges.

There are lots of different types of engineering, such as mechanical, electrical, chemical, civil and environmental engineering.



## Mathematics

The study of numbers, shapes, and space. Mathematicians usually use a special system of symbols and rules.

There are different types of Mathematics, including accounting, calculus and economics.

**Remember:** most people in STEM jobs will use skills from more than one of these at a time! Engineers need math, technology needs science... and so on



# ACTIVITY TWO: HOW DOES STEM MAKE YOU FEEL?

## What does WAGGGS want to know?

We want to understand if STEM is generally felt by girls to be a positive or a negative thing, and how girls feel about the topics.



## What you need

one large sheet of paper pre-prepared as per Step 1 below (or more if group is large), pens



## What to do

1. Prepare before the activity: In the centre of a large sheet of paper, write the words:

**“If we were going to do STEM topics at Guides/Girl Scouts next week I think it would be...”**

Now, write the words from the 'Feelings list' on the sheet at random, spaced out evenly. Do not group positive and negative feelings together.

2. Understand the topics. If possible print or write out the definitions of the STEM topics. Ask the girls to take turns reading them out. Check with the group if they understand each more clearly now.

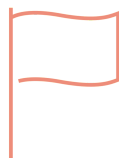
3. Ask girls to imagine that next week, you were planning to focus your Girl Guides/Girl Scouts meeting on the STEM topics. Ask them to consider, how would this make them feel?

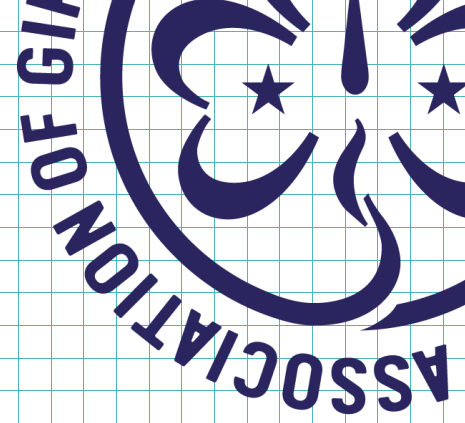
4. Ask girls to go up to the sheet one by one and tick or tally mark the feelings they have. Encourage them to consider their own feelings and not those of their friends! If they have any other feelings/comments not pre listed, encourage them to write them down on the sheet too.

**Suggestion:** If you have a large group, you could pre-make several sheets so more than one girl at a time can do the activity. You can bring together the results afterwards.

## FEELINGS LIST:

FUN  
EXCITING  
INTERESTING  
A GOOD CHALLENGE  
BORING  
HARD WORK  
TOO MUCH LIKE SCHOOL  
TOO SERIOUS





# ACTIVITY TWO: YOUR RECORD

Please record the tally of girls' feelings below

I think it would be...	Total
FUN	
EXCITING	
INTERESTING	
A GOOD CHALLENGE	
BORING	
HARD WORK	
TOO MUCH LIKE SCHOOL	
TOO SERIOUS	
Please record any other feelings mentioned here:	

# ACTIVITY THREE: STEM JOBS

## What does WAGGGS want to know?

We would like to know whether girls understand that STEM skills are of use in a very large range of jobs.



## What you need

small paper and pen for each small group and a large piece of paper



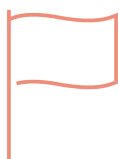
## What to do

1. Give the girls a challenge. Put them in their small groups and give them five minutes to come up with a list of 20 jobs/careers that they think you would need science, technology, engineering or mathematics skills for.

To help, encourage them to think about things and people in their everyday lives, like who is involved in getting food to a supermarket or market? Who built the road, their mobile phone or the school? Who looks after them when they are ill? Who does the government ask about what to do about climate change?

2. Come back together as a whole group and ask each small group to share their ideas – create one shared list. Do not comment on whether you agree that the jobs require STEM skills.

**Suggestion:** If you have time, you could have a deeper discussion about the skills needed for each job and record the girls' thoughts, but this is not required.







# ACTIVITY FOUR: THE WAY THE WORLD IS NOW

## What does WAGGGS want to know?

We would like to understand whether girls see that in many STEM jobs, women are underrepresented.



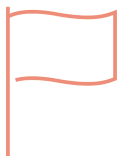
## What you need

the jobs list from page 11, pen.



## What to do

1. Prepare: Print or write the jobs and job descriptions (see page 11) on one small piece of paper each so you have separate piles of jobs and their descriptions. Prepare one set for each small group.
2. Give the jobs and their descriptions to the small groups. Challenge them to work together to match the job name with the description. The winning group is the one that matches the most correctly!
3. Put the list of jobs on a wall. Ask the group to think about each job in turn. In your country or community, do they think that right now there are more men, more women, or equal numbers of each in each job?
4. Ask the group to vote on each: call out 'more men', then 'more women', then 'equal'. To cast their vote, they could stand up or run to one side of the room. You should record the tally of each vote. You could draw a woman or man figure next to each result so it can be seen at a glance.



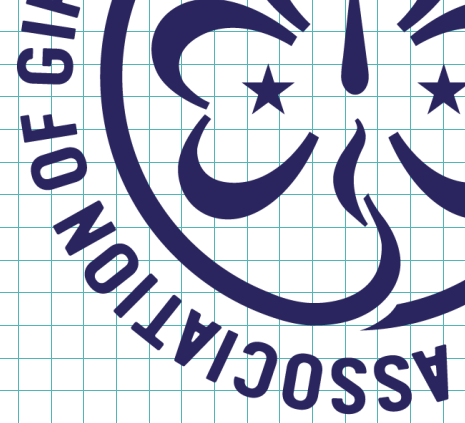
**Suggestion: if you are concerned girls may not vote on their own opinions, you could do a blind vote where girls close their eyes and stand or raise hands.**





# ACTIVITY FOUR: JOBS/CAREERS LIST

Aerospace Engineer	Designs, develops, tests and builds aircraft and spacecraft
Civil Engineer	Plan and manage big building projects like bridges or transport links
Mechanical Engineer	Design machines, from car engines to elevators
Manufacturing engineer	Based in factories, support and improve how products are made, from food to medicine
Data Analyst	Gather and organise information and use it to show patterns in the way people think or behave. Eg how people might vote or how a business could be run better
Accountant	Organise the money for a business, making sure payments are made and received, and they pay taxes correctly
Bank Manager	Provide services to customers wanting save or borrow money in a bank
Financial advisor	Help people and organisations to choose investments, savings, pensions, mortgages and insurance products.
Zoologist	Study animals and their behaviour, often to help to conserve endangered species
Geologist	Study the Earth and what it's made of like rocks and gas. Their work can help predict or protect people from landslides, earthquakes and volcanic eruptions
Midwife	Provides expert healthcare to women during pregnancy, giving birth and just after birth
Virologist	Study viruses, helping treat and prevent the diseases they cause in people, animals and plants
Software developer	Use their coding skills to develop programmes for computers and websites
Cyber security expert	Keep online systems safe from hackers by developing technology to keep them out
Robotics engineer	Design and build machines that can do actions that are like humans for industries from manufacturing to car design
Video game designer	Design and build games people can play on computers



# ACTIVITY FOUR: YOUR RECORD

	More men	More women	Equal
Aerospace Engineer			
Civil Engineer			
Mechanical Engineer			
Manufacturing engineer			
Data Analyst			
Accountant			
Bank Manager			
Financial advisor			
Zoologist			
Geologist			
Midwife			
Virologist			
Software developer			
Cyber security expert			
Robotics engineer			
Video game designer			

# ACTIVITY FIVE: WHAT'S HOLDING US BACK?

## What does WAGGGS want to know?

If girls are able to recognise the key reasons in their own community/country why there is not gender parity in STEM career opportunities.



## What you need

A long piece of string/yarn, sticky notes or small pieces of paper and tape, pens



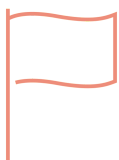
## What to do

1. Ask the girls to stand in one half of your meeting space. Put up the lists of jobs made in Activity 3 and 4 at the opposite side of the space from the group. Tie or hold string across the space, so girls are prevented from reaching the list.

2. Following on from Activity 4, ask them in small groups to think about what might be stopping women from equally participating in some of these jobs/careers. Give five minutes for discussion and writing. The groups should write their ideas down on small pieces of paper or sticky notes which then are taped or stuck to the string across the room.

**Suggestion: to help, encourage girls to think about: do girls have the same opportunities for education at school/higher education? What is expected of girls by teachers, families, societies? What jobs do media/television/film portray women as doing? What do children's stories and toys show as women's jobs?**

3. Once all the ideas are attached to the string, ask each group to feed back their ideas. Explain that we call these the 'barriers' to the girls and women participating in STEM jobs.





# ACTIVITY FIVE YOUR RECORD

Girls' ideas of barriers women and girls face to participation in STEM careers

# ACTIVITY SIX: BREAK DOWN THE BARRIERS!

## What does WAGGGS want to know?

We would like to hear from girls their ideas on what changes they want to see, to make access to STEM education and jobs equal.



## What you need

String etc still set up from Activity 5, pens, scissors



## What to do

1. Keep the string and barrier notes up from Activity 5. Ask the small groups to look at each of their ideas in turn, and on the back of their note, add one or more ideas of changes they think could be made to break this barrier. For example, if the barrier is “Girls encouraged by teachers to study arts subjects rather than STEM”, the idea could be “Governments ask schools to increase girls’ participation in secondary level STEM subjects”.

2. Share all the ideas together as a group – give girls the chance to comment on each other’s ideas and add thoughts.

3. Break down that barrier! Give girls each (or as small groups) a pair of scissors. Explain that with their ideas, they will break the barrier between them and the STEM careers. When you say ‘GO!’ they cut the string, put the scissors down on a table or hand them to you and then run towards the list of careers on the opposite wall (make sure they don’t cut the notes they have written). Collect all the notes up from the string for your record.





# ACTIVITY SIX: YOUR RECORD

Collect the notes the girls have written

Barriers	Ideas to break barriers





# ACTIVITY SEVEN: WHAT COULD WE DO?

## What does WAGGGS want to know?

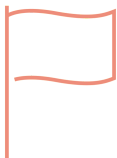
What role girls think Girl Guides/Girl Scouts could have in supporting our own girls to reach their potential in STEM, and the impact we could make in our community/world?



## What to do

As a whole group (or small groups if you have a very large number of girls, with a leader supporting each group and recording their discussion) ask girls to:

- a. Think about their own experience as Guides/Girl Scouts. What do you already do that can help develop STEM interests and skills? Do you enjoy these activities? What activities or opportunities would they like to keep doing? What new activities could you try out? You could help facilitate this by discussing some of the careers they liked the idea of and how to help them learn/experience more, from trips to mentoring to in-meeting activities.
- b. Think about their community/country – would they like to help break down the barriers to girls and women's involvement in STEM? What do they think Guides/Girl Scouts could do to make a difference to raise awareness or ask decision makers for change?



**Please record girls' key ideas as they discuss.**





# ACTIVITY SEVEN: YOUR RECORD

What experiences, activities or opportunities girls want as Girl Guides/Girl Scouts	What they could do as Girl Guides/Girl Scouts to help break down barriers (eg through community action, awareness raising or asking decision makers for change)

# THANK YOU!

## We really appreciate your time!

Why it matters

We hope you all found these activities to be interesting and fun.

Your participation in this consultation will ensure that we understand what girls and young women want from Girl Guiding and Girl Scouting on the subject of STEM.

01



02

Don't forget!

There's one final step - please visit the online form to input the information from the YOUR RECORD pages of the activity pack. You'll find it here:

<https://forms.office.com/r/6MhMBXF3qT>

Thank you from all in the WAGGGS Strategic Partnerships Team!

If you have any questions or thoughts about STEM and our consultation, please contact [gina.mills@waggs.org](mailto:gina.mills@waggs.org)