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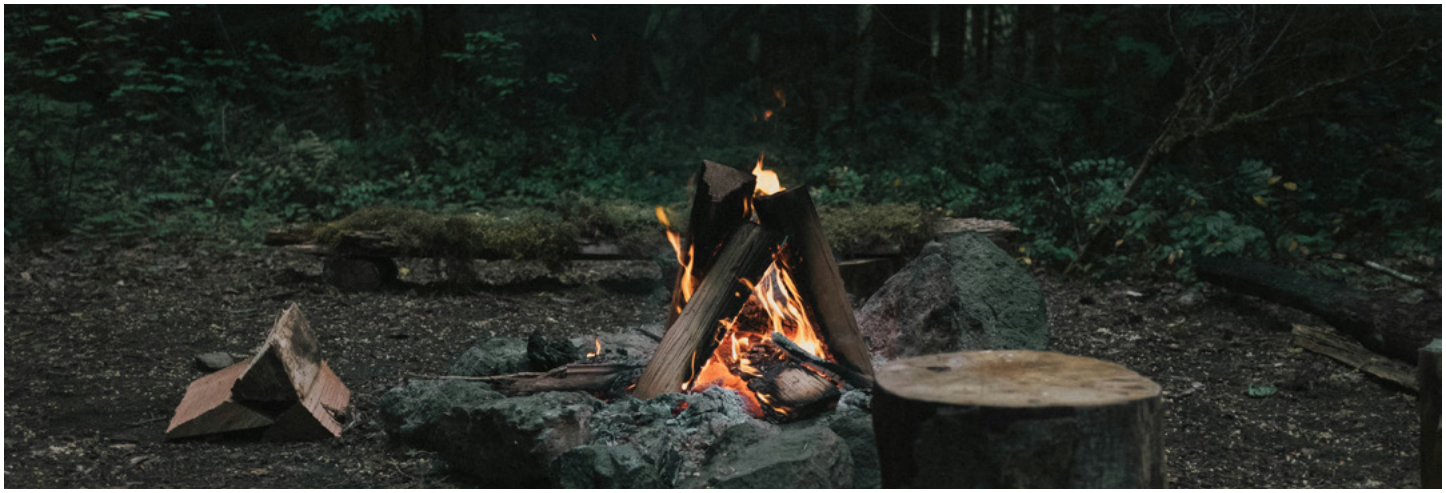


*Image: Matt Whitacre/Unsplash, CC0*

# Survival science: learning through group interviews

**Martin McHugh, Laura Coffey, Andrew Fagan, Mary Flood, Laura Foley, Jamie Guidera, Md Kamruzzaman, Oxana Kotova, Kruga Owodeha-Ashaka, Maja Railic, Callum Ryan**

Live by your wits: group interviews based on disaster scenarios provide a fun opportunity to develop scientific literacy and transferable skills.

Group interviews are a common way for large companies to assess multiple candidates simultaneously. It has proved to be a cost-effective method to evaluate how people interact with each other in what can be a high-stakes environment. Group interviews are designed to test soft or transferable skills, such as communication and leadership. While in a company this approach is pragmatic, they knowingly or unknowingly tend to utilize role-playing situations that also examine scientific literacy. From desert survival to missions on the moon, group-interview activities often use scenarios with environmental limitations, where participants must work together to prioritize a list of items to ensure their survival.

This type of activity can be readily applied to a science classroom, providing a novel and engaging approach for teaching and learning. In the past decade, soft skills have emerged as important factors linked to student achievement, emotions, motivation, and life satisfaction. Such skills include adaptability, curiosity, and social awareness.[1] Yet, many science curricula are dominated by learning objectives grounded in scientific knowledge. While efforts have been made to make science more relevant, resources that highlight the inherent social aspects of science are warranted. Developing an understanding of the social and institutional dimensions of science aid students in the development of scientific literacy.[2]

Accordingly, group interviews with a distinct focus on science can provide a contextual learning experience with a real-world application. This activity is aimed at science lessons for students aged 15–17 but can work with younger students and even adults. The premise of the activity is that students are presented with a scenario or short story. Here, we give three examples.

### Antarctic escape: scientists trapped at a research facility

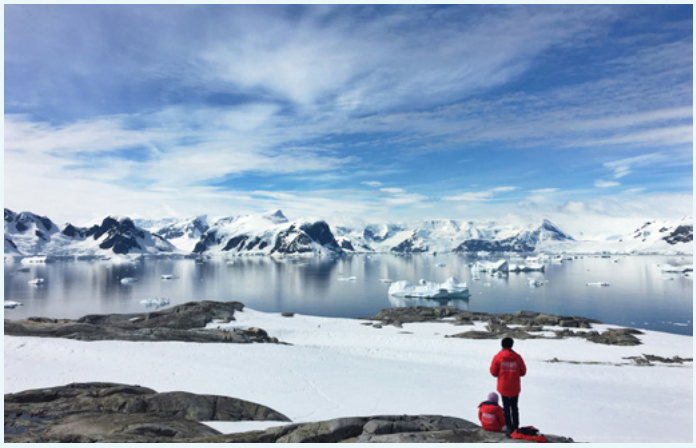
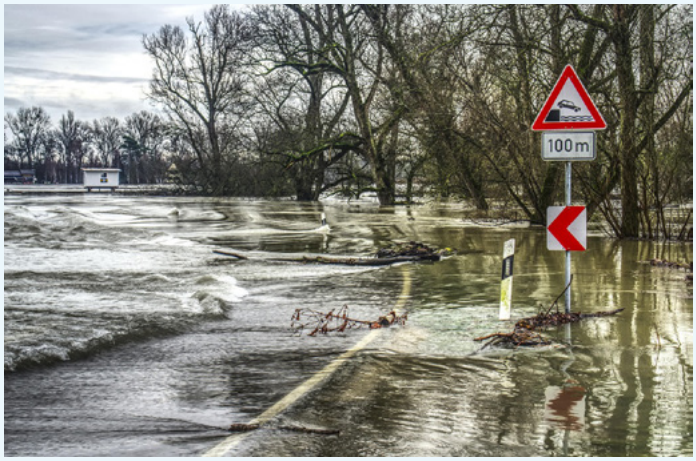


*Image: Cassie Matias/Unsplash, CC0*

### Rainforest rally: students navigating the Amazon rainforest

*Image: David Clode/Unsplash, CC0*

### Flood fighters: people trying to survive a flood

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In each instance, a list of unique items is given. Many items listed are linked to the science curriculum, while others are items that students will have interacted with in their daily lives. The goal of the activity is that, through constructive debate and argumentation, students must come to a group consensus and list the items from most to least important.

What makes the activity 'tick' is selecting a scenario with environmental limitations and variables, combined with a balanced list of items that open avenues for scientific reasoning and discourse.

The Antarctic escape activity is described below, but the other two follow a very similar format. Materials for all three scenarios are provided in the supporting material.

## Activity: Antarctic escape

This scenario places students in an isolated Antarctic research facility. Upon the accidental release of a pathogen, students must work together to use items effectively and ensure their survival.

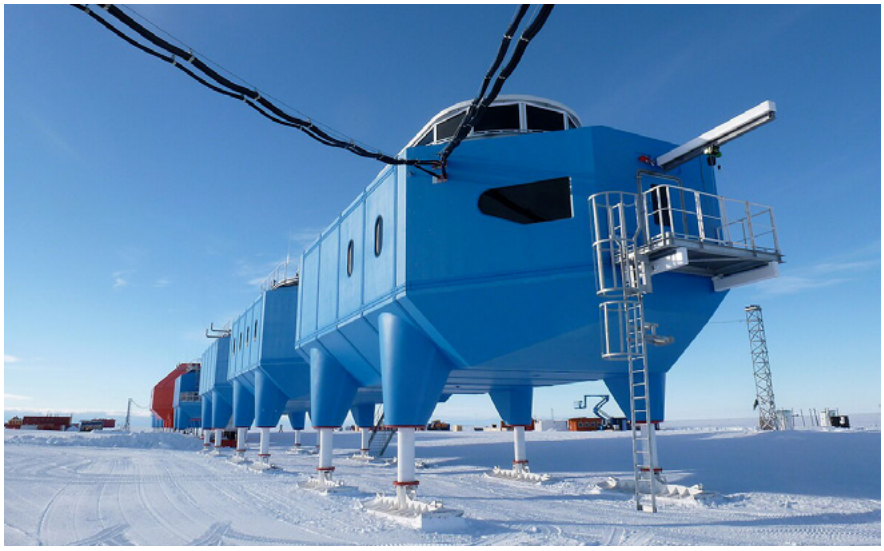
This activity should take around 40 minutes.

### Materials

- Pen and paper
- A printed copy of the scenario handout for all students
- A printed copy of the scoring sheet for all students
- Optional: marking rubric
- Whiteboard or other large board or screen to record the class item ranking

### Procedure

1. Introduce the activity by explaining the concept of a group interview to students. Give details on positive behaviour that can be displayed during a group interview, such as making strong arguments, taking on feedback, and working with others. Make it clear that behaviour such as talking over others, talking too much, and making weak arguments will be marked negatively and is not what an employer (or teacher in this instance) wants from the activity. Social interactions and scientific arguments will determine if students pass the group-interview stage.
2. You can further engage students by asking them why companies might use a group interview as opposed to interviewing people individually, or what kind of actions will make you stand out in a group interview (answers can be positive or negative). Finally, ask students if it



Halley VI Antarctic Research Station

*Image: Hugh Broughton Architects/Wikimedia Commons, CC BY-SA 4.0*

is a good strategy to talk too much or too little during a group interview. Essentially, they are trying to hit the Goldilocks zone, with just the right amount of talking and listening.

3. Each student is given the scenario handout. The handout contains the scenario description and a table listing 15 items that have varying levels of usefulness for the scenario.
4. Read the scenario aloud to the students and explain that the task is to rank the articles in order of usefulness, using scientific arguments, first individually and then as a group. Introduce the self-scoring system at this stage to make it clear that this is a fun exercise and should not be a source of stress!
5. To start, students are given around 10 minutes to reread the scenario and start to rank the items by themselves and record their individual rankings on their handouts. Items are ranked from 1 to 15 in order of their usefulness pertaining to the survival of the group in a given scenario, with 1 being the most important and 15 being the least important.
6. Once the individual rankings are complete, the entire class is asked to come together and create a new ranking as a group. This process should take between 15 and 20 minutes. The teacher writes the group rankings on the board.
7. Ask students to rank their first item and to make arguments for why they have placed the item in that slot. Feel free to ask probing questions or diffuse potential debates, depending on how long it takes to rank certain items.
8. A good strategy is, once the group has ranked their first five items, to ask them to change tactics and rank the worst items. The best and worst items are easiest to rank. Feel free to go through the items that rank in the middle faster, as they have less importance over the highest- and lowest-ranked items.
9. If students are stuck or in a gridlock, you can ask them to vote by raising their hands. Even better is if a student asks the rest of the group to vote.
10. To finish the activity, hand the students the scoring sheet with the official article rankings. Students can work out the difference between this and their individual results, and on this basis, give themselves a grade to determine their scenario outcome based on the self-scoring system (see below).

## Scenario-outcome scoring

**0–25 Excellent** – you and the team survive and become minor celebrities.

**26–32 Good** – you and the team are shaken up, but happy to be alive.

33–45 Average – you are found wandering in the tundra and are helicoptered to safety.

**46–55 Fair** – you survive the expedition but leave your researcher role, turn your back on science, and spend the rest of your days believing the Earth is flat.

**56–70 Poor** – you are emotionally scarred for life and develop globophobia (fear of balloons).

**71–112 Very poor** – you become infected and don't make it out of the research facility.

11. While this is happening, you can score the class item ranking on the board. It is important to note that this grade does not determine if students pass the group-interview stage; it just determines whether the team has survived the scenario!
12. Ask the class about their individual grades and see if anyone scored better than the group.
13. Once complete, provide constructive feedback to the entire class on positive behaviour demonstrated during the activity. Feel free to give examples of these types of behaviours that took place during the activity. If you decide to give individual feedback, you can use the scoring rubric provided in the supporting material.

## Results/discussion

The effectiveness of this activity relies on the teacher acting as a facilitator of arguments and debates. By moderating behaviour, the teacher can try to ensure that louder voices are limited in terms of their impact and quieter voices are given time to talk. This is important, as the idea of a group interview can be intimidating for less-confident students. Teachers should facilitate an inclusive learning environment.

In terms of items, the results give a justification for their placement, but teachers can use their knowledge and experience to encourage discussions around their usefulness. Some items may have multiple use cases. For example, a lab notebook might provide useful information in a survival scenario and can also be used as fuel in a fire. Furthermore, some items have ethical implications. For example, pistols and bullets are often included in these types of group interviews. While they may have some practical use, the question remains as to who gets control of these items in a survival scenario where you may not be able to trust everyone. Students will often think about items from a scientific or survival point of view, but not an ethical one. The item ranking that is developed collaboratively by the class should reflect their input. A persuasive argument for an 'incorrect' item is important, especially if that student convinces classmates to follow their line of thinking.

Student self-scoring is designed to be fun, and each score informs the student of what happened to them in the end. Some students will survive, some won't, and others will turn their back on science and become flat-earthers. This self-score should not impact too much on whether the student gets through to the next round of interviews, as the focus of the activity is on developing transferable skills. Expanding on this, there may even be a case where a student gets all the science incorrect but is charismatic and convincing to the point that others in the group follow. This can lead to discussions around misinformation and critical thinking.

*Image: StockSnap/Pixabay, CC0*

Teachers can decide who has passed the activity based on their observations of the class. Generally, three or four students stand out in terms of their engagement, teamwork, arguments, and persuasiveness. For teachers who would like a more formal assessment for their students, the rubric provided will allow them to score students and determine who has passed the activity and who can improve. This is particularly beneficial if you plan on running different scenarios multiple times with the same class. «

## References

[1] Feraco T et al. (2023) An integrated model of school students' academic achievement and life satisfaction. Linking soft skills, extracurricular activities, self-regulated learning, motivation, and emotions. *European Journal of Psychology of Education* **38**: 109 –130. doi: 10.1007/s10212-022-00601-4

[2] Erduran S (2023). Social and institutional dimensions of science: The forgotten components of the science curriculum? *Science* **381**: 6659. doi: 10.1126/science.adk1509

## Resources

- The NASA Moon Survival challenge as a team-building exercise.
- Explore laboratory safety with creative horror stories about lab disasters: Havaste P, Hlaj J (2024) Lab disasters: creative learning through storytelling. *Science in School* **68**.

- Use simple materials like paper and string to visualise data in an engaging way: Lisotti A (2024) Tangible statistics: cutting and weaving through data. *Science in School* **70**.
- Learn about renewable energy in a fun and informal way: Cornelius S, Neuhaus A (2025) Explore energy production with the escape game 'Village of the Future' *Science in School* **71**.
- Explore the nature of science by investigating a mystery box without peeking inside: Kranjc AH et al. (2022) The mystery box challenge: explore the nature of science. *Science in School* **59**.
- Explore the conservation and transfer of energy with Rube Goldberg machines: Ferguson S et al. (2022) Conservation and transfer of energy: project-based learning with Rube Goldberg machines. *Science in School* **56**.
- Try this role-playing activity to understand how research projects are funded and the importance of basic research: McHugh M (2022) What is it good for? Basic versus applied research. *Science in School* **55**.
- Take a look at our selection of articles showcasing budget-friendly experiments with everyday materials: Godinho T (2025): Science on a shoestring: inspiring experiments with everyday items. *Science in School* **73**.
- Learn how biomimicry can be an inspiring teaching tool that engages students by solving real-world problems: Dawson R (2024) Biomimicry: a nature-based approach to designing sustainable futures. *Science in School* **69**.
- Learn how to distinguish between real and fake astronomical images: Muñoz Mateos JC (2024) CSI Astronomy: learn how to spot fake astrophotography images. *Science in School* **69**.
- Learn about the problem of pseudoscience in the media: Domenici V (2022) Fake news in chemistry and how to deal with it. *Science in School* **59**.
- Learn how some of the elements used in modern technology are scarce and finite resources: Furze J, Harrison T (2021) Elements in danger! *Science in School* **54**.