

# Can you communicate in outer space?

## Session Leader Notes

### You will need:

- Printed worksheets
- Access to computer, projector and sound to display Oxplore Challenge Slides
- Writing surface and pens
- Face masks (you will need to provide these)
- Cue cards (print from site)

### General pointers on this session:

- This session takes approx. 45 minutes to deliver.
- This session works well with group sizes from approx. 8 to 40 pupils.
- Pupils will need to be broken up into small groups. Small groups should ideally not contain more than 4 pupils per group.
- This session is designed to build the Oxplore Key Skills of curiosity, creativity and adventurousness
- This session is focused on psychology but skills are transferrable across all subjects.

### Session breakdown:

Suggested timings (minutes)	Slide content	Discussion points/Notes
Prior to pupils entering room	Slide 1: Title	<ul style="list-style-type: none"><li>• Move to Slide 2 as soon as pupils begin entering</li></ul>
From first pupil entering room to all pupils seated	Slide 2: Brain teaser (I never start work until the day I get fired. What am I ?)	<ul style="list-style-type: none"><li>• Pupils may start calling out ideas/discussing aloud.</li></ul>
0.00-3.00	Slide 3: Answer: A rocket!	<ul style="list-style-type: none"><li>• Give them the answer</li></ul>

3.00-5.00	Slide 4: Skills you'll be building today (Curiosity, Creativity, Adventurousness.)	<ul style="list-style-type: none"> <li>Briefly introduce each skill, give more detail if this is group's first Oxplore Challenge</li> <li>You could point out here that these skills are essential for careers and further study, and will help you in your GCSEs and A-levels.</li> </ul>
5.00-6.00	Slide 5: Video intro (video approx. 1:29)	<ul style="list-style-type: none"> <li>Key Term: Social Cognition</li> </ul>
6.00-11.00	Slide 6: Activity: Discussion questions	<ul style="list-style-type: none"> <li>Direct pupils to discuss in pairs or groups: Can you think of a time when you worked out how someone was feeling without them using words to tell you?</li> <li>Some groups may require check-ins to keep on task.</li> <li>Offer pupils the chance to share their answers with the rest of the class.</li> </ul>
15.00-16.00	Slide 7: Video challenge (video approx. 1:20)	<ul style="list-style-type: none"> <li>Cueing in main challenge.</li> </ul>
17.00-27:00	Slide 8: Activity - Main Challenge prompt	<ul style="list-style-type: none"> <li>Put the class into pairs</li> <li>Give out cue cards and masks to both students</li> <li>The person who reads the cue cards who is wearing the mask acts out the emotion first and their partner has to write down their guesses. After all the cue cards have been used, they can compare the emotion on the card with what was written down.</li> <li>If they finish early, they can shuffle the cards and reverse the roles</li> </ul>
27.00-37.00	Slide 9: Activity - Brainstorm	<ul style="list-style-type: none"> <li>Brainstorm: How can we stop misunderstanding from arising while travelling in space?</li> <li>Direct pupils to the exercise in their workbooks.</li> <li>Pupils will read the excerpts from each expert involved in the space mission.</li> <li>Pupils will need to imagine they are the expert and write 1 recommendation on how to stop misunderstandings in space.</li> <li><b>Modelling Text:</b> E.g. A visual communication specialist might suggest using picture cards to represent different emotions, which can help astronauts understand each other's feelings.</li> <li>Some pupils may require check-ins to keep on task.</li> <li>Offer pupils the chance to share their answers with the rest of the class.</li> </ul>
37.00-38.00	Slide 10: Action: Send Team Oxplore your worksheets	<ul style="list-style-type: none"> <li>If you would like to, please photograph pupils' work and email it to us at (<a href="mailto:oxploreteach@admin.ox.ac.uk">oxploreteach@admin.ox.ac.uk</a>). There is no obligation to do this, but it is very helpful for qualitative evaluation purposes. Please do not include identifying information about pupils, eg. crop/blur names.</li> <li>Pupils may ask "Do people at Oxford really read it?", the answer to this is yes, as it helps us to understand whether or not our programmes are helping people to develop their skills.</li> </ul>

38:00-40:00	Slide 11: Have you practised these skills today? (Curiosity, Creativity and Adventurousness)	<ul style="list-style-type: none"> <li>• Pupils are asked to judge whether they have practised each key skill.</li> <li>• You could ask pupils to carry out their self-assessment by: <ul style="list-style-type: none"> <li>○ Closing their eyes and raising their hands if they feel they have practised each skill</li> <li>○ Giving a thumbs-up/thumbs-down to say whether they feel they have practised each skill</li> </ul> </li> <li>• If you are able to record how many pupils feel they have practiced each skill, please email this to us at (<a href="mailto:exploreteach@admin.ox.ac.uk">exploreteach@admin.ox.ac.uk</a>).</li> <li>• This is another good time to build academic self-concept by emphasising that these skills are important for your future, and will get stronger each time you use them.</li> </ul>
40:00-41:00	Slide 12: Congratulations	<ul style="list-style-type: none"> <li>• This could be a good point to gesture forward to future Oxplore Challenge sessions, or tally how many sessions the group has now completed if you are keeping count.</li> </ul>
41:00-45:00	Slide 13: If you enjoyed this session, here are some subjects you may be interested in studying in the future...	<ul style="list-style-type: none"> <li>• Here you can discuss how these skills and this topic can be applied to further study. If you have additional time, this could be a useful jumping-off point for discussion about supercurricular opportunities available within your school/local area.</li> </ul>

NAME:

DATE:

# Can you communicate in outer space?

## Key Term

Social cognition: the ability to detect and understand social information given by others, e.g. about their thoughts and emotions.

Can you think of a time when you worked out how someone was feeling without them using words to tell you?

How can you tell if someone is excited?

How can you tell if someone is worried?

Can you think of a time when it was difficult to tell how another person was feeling?

Why was it difficult to tell?

## Can you communicate without words or facial expressions?

	My Guess	Answer
Emotion 1		
Emotion 2		
Emotion 3		
Emotion 4		

What did you find difficult about this activity?

What extra information might have helped?

# How could we prevent misunderstandings from arising while travelling in space?

Below are four experts from different fields. Can you work out one suggestion that each expert might make to help prevent misunderstandings arising in space?

## **VISUAL COMMUNICATION SPECIALIST**

My job is to come up with different ways to use pictures and animations to convey information. I work on tasks such as designing easy-to-recognise icons for websites, creating universally recognisable signs to guide people around buildings, and deciding the best way to place graphics over TV news reports.

My suggestion would be:

## **PSYCHOLOGIST**

I focus on how people think, feel and behave, and the impact this has on them and on their relationships with others. I'm interested in how people communicate, including through body language and posture. I also help people deal with the frustrations of not being able to communicate clearly and of being misunderstood.

My suggestion would be:

## SOFTWARE ENGINEER

I design and create computer systems and applications to solve real world problems. These include the apps and computer programmes which we use today to help us to communicate. I'm very excited about the ways in which artificial intelligence (AI) will create new ways for us to communicate with one another.

My suggestion would be:

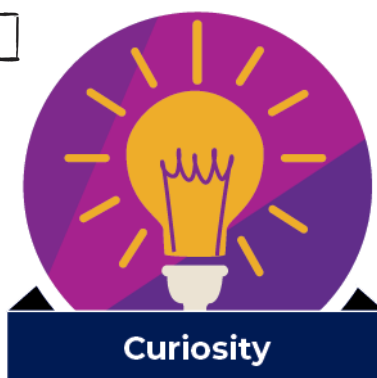
## LINGUIST

I study how different languages are related to one another, how they change over time, and how people learn and process language. I'm interested in how languages are spoken and written, including the use of text messages and emojis! I think languages are evolving all the time and humans continually find new ways to communicate.

My suggestion would be:

## CHALLENGE SKILLS

Tick the skills you have practised.



# Learning Resource

## Cue Cards



Surprised



Happy



Embarrassed



Sad



# Learning Resource

## Cue Cards



Excited



Angry

## Can You Communicate in Outer Space?

### Transcript pt.1

00:01 Hello, my name is Tianqi Wang. I'm a research in biology at the University of Oxford. I study guppies, which are a type of fish. Researchers study how guppies grow, evolve and communicate. You might not think this has anything to do with humans or even outer space, but there are more connections than you might think.

00:19 As humans, we cannot survive on our own. Humans are constantly looking for the chance to interact and bond with others. However, living on another planet could be very different from our lives on planet Earth.

00:36 If connecting with others on Earth is already a difficult task, how are we supposed to understand what others think and feel in outer space?

00:42 Social cognition is the term that psychologists use to describe the ability to detect and understand the social information that other people give us. This includes understanding each other's thoughts and emotions. Thanks, to evolution, most human beings' minds are capable of detecting even the most subtle of social signals. This makes many social detectives.

01:03 Social signals are behaviours we use to give other people social information. Some common social signals are facial expressions, eye contact and body gestures. In your groups, you now have a few minutes to think of some examples of how you might use social cognition in every day life.

## Can You Communicate in Outer Space?

### Transcript pt.2

00:01 Some interesting thoughts and ideas there, but what might be different about how social cognition works when we're travelling in outer space?

00:08 Since not many people have been to space yet, and most of those have been highly trained astronauts, we don't know very much about what it would be like for ordinary people to interact with each other in outer space.

00:17 At least some of the time it seems like we would have to wear heavy helmets and suits that protect us from harmful radiation. However, wearing helmets would mean that we would not see each other's faces so easily. We could miss subtle facial expressions. Wearing heavy suits would stop us from walking as smoothly as we do on Earth and might make changes to our body language too. Zero gravity might also impact our posture and movement and affect our ability to make hand gestures.

00:53 For our next activity we're going to try to imagine what that might be like. You'll need to get into pairs. Both of you need to put on face masks so that you cannot read each other's facial expressions. You will read the cue cards and act out the emotions on the card. Your job is to figure out what emotion your partner is trying to convey.

01:013 You can write down the feelings and compare your answers afterwards. How hard was it to communicate?