

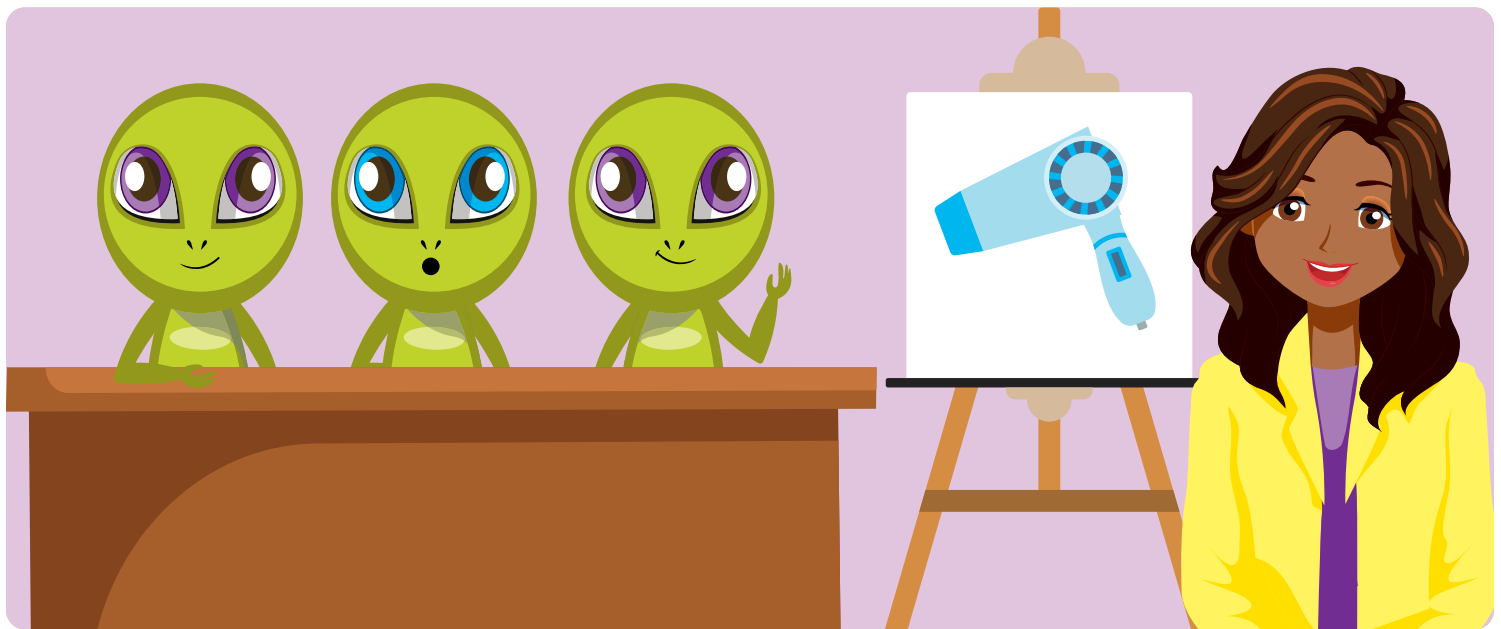
Intergalactic Interview

The Tech Challenge 2024

Grade Levels: 4-12

60 min

Students will practice their interview skills by pitching an ordinary Earth item to a panel of alien investors. Groups will take turns acting as both the design team and the panel as they build skills in giving and receiving feedback.



Outline

Frame the Activity	15 min total
Activate Prior Knowledge	5 min
Introduce the Challenge	10 min
Activity	45 min total
Brainstorm	15 min
Device Pitches	20 min
Feedback Review	5 min
Debrief	5 min

Grade Levels: 4-12

Duration: 60 min each

Concepts/Skills

Interview skills, pitching, providing constructive feedback

Objectives

Students will:

- Brainstorm how to effectively pitch a design.
- Share information and answer questions about a design from a panel of interviewers.
- Practice interviewing another team and taking notes on what they shared.
- Develop skills in constructive feedback.





To learn more about this year's Tech Challenge, go to thetech.org/thetechchallenge



The Tech Challenge

This lesson was created to prepare students for the 2024 Tech Challenge: Cosmic Quest, presented by Amazon.

An important part of a team's Tech Challenge Final Showcase experience is getting to introduce their design to a panel of judges. In addition to reviewing the team's journals and observing how they operate their device, the judges will have a conversation with the team about their design process. They want the team to tell the story of how they brainstormed, tested, and iterated on their device. Practicing in an informal setting can help prepare teams for talking about their design process in more formal settings like the Tech Challenge Final Showcase.

Even if you are not planning to participate in The Tech Challenge Showcase, this lesson can help students develop their speaking skills. Whether students choose to pursue a career in science, technology, engineering and mathematics (STEM), business, non-profit work or even working for themselves, everyone needs to be able to explain their ideas to others in a clear and convincing way. This lesson will give students experience with pitching a product, responding to interview questions, and best practices for giving and receiving feedback.

Materials and Preparation

Materials

- Pen or pencil (1 per student)
- [Intergalactic Interview Handout](#) (1 per team)



Preparation

1. Collect, organize, and set up materials.
2. Print out [Intergalactic Interview Handouts](#).
3. Plan to have students work in teams of 3-4.
 - Be ready to have participating students get into their Tech Challenge teams for this activity. This will give them practice with being interviewed as a team.
4. Try out the activity yourself with other educators or other learners you know. This will give you experience with the materials and tools so you can anticipate student questions.



Tech Tip

See our [educator guides and videos](#) for more design challenge facilitation techniques. For this lesson check out: Innovator Mindsets



Frame the Activity

Activate Prior Knowledge (5 min)

1. Let students know that today they are going to be practicing their interview skills by taking on the roles of interviewer and interviewee in a **design pitch**.
2. Ask students to think about a time that someone told them a compelling story that made them want to do something in response.
 - Examples might include a commercial or a conversation with a friend.
3. Encourage them to think about what aspects of that story or conversation made it interesting and convincing.
 - *What made their words convincing to you?*
 - *Did the way they presented the information make a difference?*
4. Tell students you have two examples of pitches that were made to a team of investors.
 - Have them look over the pitches and comment on what aspects of each pitch are strong.
 - They can highlight specific statements that seem more interesting or compelling.

Presenter A [The Falbertigibit]	Presenter B [The Exonray]
"Our product took three months to develop. We designed 15 different prototypes."	"Our first prototype failed because the materials couldn't handle the weight during testing. We were inspired by a movie we watched and changed out the supports. We saw a big improvement!"
"Our team of engineers considered personal experience, did research, and held test trials to ensure that we had included features for universal accessibility."	"We combined features from two of our original designs to meet the needs of more people."
"Testing was a core part of our design process. We used data from each test to guide the changes that we made next."	"We tested our designs many times."
"Our final prototype uses the materials that proved most successful during testing."	"The materials we used in our final prototype are lightweight for easy transport, flexible to help it fit in different settings, and inexpensive."

5. Take a minute to synthesize student ideas into a list of key features they thought were interesting.
For example, the presentation:
 - Provided specific details.
 - Talked about the design process.
 - Told a "story." For example: Explaining some of the steps (with a beginning, middle, and end).
6. Let the students know that these are some of the things they will have a chance to practice themselves. In addition to creating a pitch, they are also going to be practicing giving and receiving **constructive feedback**. They will be...
 - Providing feedback to another group on their pitch.
 - Analyzing feedback provided by that same group on their own pitch.

Note: Both sample pitches include strong answers. If needed, remind students there is no "winner" or right answer. Instead, they are looking to see what aspects of each seemed more compelling.

Introduce the Challenge (10 min)

1. Introduce the **design scenario**:

Your design team was asked by a panel of alien investors to create an amazing new invention for them. But your team has been so busy with other projects, you forgot all about it until now — and the presentation is tomorrow! Fortunately these aliens have never been to our planet and are unfamiliar with devices made on Earth. You need to convince the alien investors that an ordinary Earth device is an incredible new product and that your team has been working hard on making this product a reality. This will take practice to be convincing, so you will rehearse with another team, taking turns acting as the aliens.

2. Introduce the roles. Let students know that they will be switching roles halfway through, so each group will be playing both roles.

Role 1: Design Team	<ul style="list-style-type: none"> • Pick an earth object to pitch as an amazing new product. • Brainstorm and make a pitch to the Alien Investors. • Answer questions from the Alien Investors.
Role 2: Alien Investors	<ul style="list-style-type: none"> • Ask the Design Team questions from the Intergalactic Interview Handout.

3. Review the [Intergalactic Interview Handout](#) with the class.

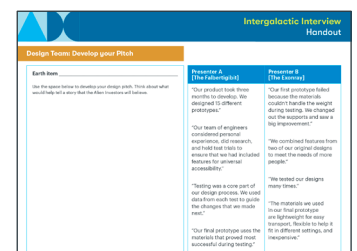
- **Page 1** shows how long to spend on each part of the interview and when teams should switch roles.
- **Page 2** includes space for students to brainstorm their pitch.
- **Page 3** has the Alien Investors' interview questions and space to record their constructive feedback.
- **Page 4** asks the Design Team to score themselves and record what they think went well/needs improvement.
- **Page 5** has teams reflect on giving and receiving constructive feedback.

Interview



Brainstorm (15 min)

- Have students get into their Tech Challenge teams.
 - If the class is not preparing for the Tech Challenge, have students get into groups of 3-4.
- Pass out one [Intergalactic Interview Handout](#) to each team.
- Have all of the teams pick their Earth item and brainstorm what they want to include in their design pitch. They will need to:
 - Pretend that they were the inventors of this item.
 - Talk through the process they used to create it.
 - Tell a compelling story about their design and process.
- Teams can look at the examples on **page 2** of the [Intergalactic Interview Handout](#) for inspiration on what they may want to include in their pitch.
- Make sure teams have given some thought to how they will share the process of presenting and speaking between team members.
 - Each team member should plan to speak during the interview.
 - There may be some students who feel more comfortable speaking. Students can take that into account as they divide up roles or think about how they will respond to questions.



Page 2

Being Bold

Whether students are experienced or not with public speaking, it can be extremely nerve-racking to speak in front of a panel. Try these strategies for encouraging students to manage feelings of anxiety and being bold when speaking to an audience:

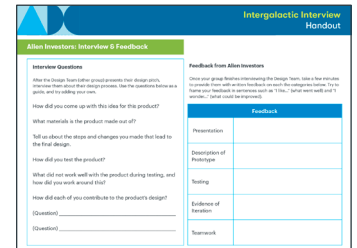
- Anxiety can put the brain into fight, flight, or freeze mode. Take slow, deep breaths to signal to your brain that you are safe. This will also provide more oxygen to your brain, improving your ability to think.
- While you're speaking, try looking for the friendly faces in the audience. Imagine that you are only speaking to them.
- Don't be afraid to briefly pause before responding to a question from the audience. This will give you a moment to collect your thoughts and consider the best way to answer.

Check out the [Explore Design Challenge Learning page](#) and the [Innovator Mindsets Tech Tip](#) for ideas on how to help learners become creative problem solvers and be bold when facing challenges. Here you can find a variety of Tech Tips, videos, and downloadable resources.

Device Pitches (25 min)

Part 1: Pitches and Interviews

1. Have groups pair up.
2. Let them know they will each have about one minute to make their pitches and five minutes to respond to questions. Remind them that, while the other group pitches, their job is to take notes so that they can ask questions.
3. When teams are playing the role of Alien Investors, they can use the **Interview Questions** on [page 3](#) in their [Intergalactic Interview Handout](#) as a starting point, but they are not required to ask all of the questions.
 - Ask them to record other questions they asked the Design Team in the spaces provided.
 - Encourage them to have a natural conversation, asking follow-up questions as they think of them and are interested in more information.



The handout page includes a section for 'Interview Questions' with several prompts for the Alien Investors to ask the Design Team. It also features a 'Feedback from Alien Investors' table with columns for 'Presentation', 'Description of Prototype', 'Testing', 'Evidence of Iteration', and 'Teamwork'.

Page 3

	Design Team	Alien Investors
1 min	Present their pitch.	Silently listen. Take notes.
5 min	Respond to Questions.	Interview and ask questions.
Reflection and Feedback		
3 min	Reflect on their pitch.	Gather feedback to give.
1 min	Listen and take notes.	Give feedback.
Switch roles		

Part 2: Reflection and Feedback

- Once an Alien Investor team is finished interviewing the Design Team, the team should take a couple minutes within their group to fill out the Feedback from Alien Investors section on **page 3** in [Intergalactic Interview Handout](#).
 - Was their pitch convincing? Would your panel have invested in the product?
 - How did they address your group's questions? Would the Alien Investors be satisfied with their responses?
 - What do you think they could have done differently to be even more persuasive in their pitch?
- While the Alien Investor team is recording their feedback, the Design Team should score themselves and record what they think went well in their pitch and what could use improvement on **page 4** of the [Intergalactic Interview Handout](#).
- Optional:* Have the Alien Investors verbally share one or two highlights from their feedback before the teams switch roles.
 - All of the teams will have a chance to re view the written feedback they received and respond to it in the next section.

Design Team Self-Reflection	Score			What went well? What could be improved?
	1	2	3	
Presentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Description of Prototype	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Testing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Evidence of Iteration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Teamwork	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Page 4

Feedback Review (5 min)

- Next teams should exchange their [Intergalactic Interview Handout](#) with the other team.
- Tell them to review what the other team wrote, then provide some feedback of their own on the Investors' assessment in the **Response to Feedback** section on **page 5**.
 - Which feedback was most helpful?
 - Was any of the feedback confusing?
 - Did their feedback give you a sense of what went well and what you might want to consider doing differently next time?
 - What questions do you still have about your group's pitch?

Which feedback was most helpful?	
Was any of the feedback confusing?	
Did their feedback give you a sense of what went well and what you might want to consider doing differently next time?	
What questions does your group still have about your pitch?	

Page 5

- When teams are finished they can switch their handouts back so they can see the the response to their feedback.

Debrief (5 min)

- After students share their work, bring the conversation back to the concepts and what they learned.
- Lead a short debrief while asking some questions.
- Possible **Debrief Questions** include:
 - How did it feel to pitch your ideas? What would you change next time?
 - What was it like being the interviewer? What did you learn from the experience?
 - Was it challenging to come up with constructive feedback? How did you decide the best way to share your thoughts?

Extension

Iterate and Improve: Have teams compare their self-assessment with the feedback they received. While they consider if there were any differences, they should choose a few things they want to improve about their pitch. Have teams revise and pitch to a new team.

Note: If teams are participating in The Tech Challenge they can use this same process to prepare for the Showcase. Instead of re-pitching their designs, have them apply what they have learned to practice pitching their Tech Challenge devices.

Standards Connections

Next Generation Science Standards

Science and Engineering Practices Grades 3-12	Engaging in Argument from Evidence Respectfully provide and receive critiques from peers about a proposed procedure, explanation or model by citing relevant evidence and posing specific questions. Identify the evidence that supports particular points in an explanation.
Cross-Cutting Concepts	Cause and effect

Common Core State Standards

4-12	CCSS.ELA-LITERACY.SL.X.4	Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
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Vocabulary

- **Design pitch:** A formal presentation of a concept by a designer to a client
- **Constructive feedback:** A type of feedback aimed at achieving a positive outcome by providing someone with comments, advice, or suggestions that are useful for their work

Intergalactic Interview Handout

Names:

Date:

Your design team was asked by a panel of alien investors to create an amazing new invention for them. You need to convince them that an ordinary Earth device is an incredible new product and that your team has been working hard on making this product a reality. This will take practice to be convincing, so you will rehearse with another team, taking turns who is acting as the aliens.

	Design Team	Alien Investors
1 min	Present their pitch.	Silently listen. Take notes.
5 min	Respond to Questions.	Interview and ask questions.
Reflection and Feedback		
3 min	Reflect on their pitch.	Gather feedback to give.
1 min	Listen and take notes.	Give feedback.
Switch roles		

Design Team: Develop your Pitch

Earth item _____

Use the space below to develop your design pitch. Think about what would help tell a story that the Alien Investors will believe.

Sample Pitches

Presenter A [The Falbertigibit]

“Our product took three months to develop. We designed 15 different prototypes.”

“Our team of engineers considered personal experience, did research, and held test trials to ensure that we had included features for universal accessibility.”

“Testing was a core part of our design process. We used data from each test to guide the changes that we made next.”

“Our final prototype uses the materials that proved most successful during testing.”

Presenter B [The Exonray]

“Our first prototype failed because the materials couldn’t handle the weight during testing. We changed out the supports and saw a big improvement.”

“We combined features from two of our original designs to meet the needs of more people.”

“We tested our designs many times.”

“The materials we used in our final prototype are lightweight for easy transport, flexible to help it fit in different settings, and inexpensive.”

Alien Investors: Interview & Feedback

Interview Questions

After the Design Team (other group) presents their design pitch, interview them about their design process. Use the questions below as a guide, and try adding your own.

How did you come up with this idea for this product?

What materials is the product made out of?

Tell us about the steps and changes you made that lead to the final design.

How did you test the product?

What did not work well with the product during testing, and how did you work around this?

How did each of you contribute to the product's design?

(Question) _____

(Question) _____

Feedback from Alien Investors

Once your group finishes interviewing the Design Team, take a few minutes to provide them with written feedback on each the categories below.

Try to frame your feedback in sentences such as:

- "I like..." (what went well) and
- "I wonder..." (what could be improved).

Feedback	
Presentation	
Description of Prototype	
Testing	
Evidence of Iteration	
Teamwork	

Design Team: Self-reflection

While the Alien Investors are writing their feedback, talk with your team and give yourself a score in each category (1 = Excellent, 2 = Ok, 3 = Could be improved). Write down what your team thinks went well and what needs adjustment.

	Score			What went well? What could be improved?
	1	2	3	
Presentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Description of Prototype	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Testing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Evidence of Iteration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Teamwork	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Design Team: Response to Feedback

After both groups have completed their Alien Investor Feedback and Self-reflection, trade handouts and review the feedback they gave your group. Take a minute to reflect on their assessment, then respond to their feedback by answering the questions below:

<p>Which feedback was most helpful?</p>	
<p>Was any of the feedback confusing?</p>	
<p>Did their feedback give you a sense of what went well and what you might want to consider doing differently next time?</p>	
<p>What questions does your group still have about your pitch?</p>	