TEEN SCIENCE CAFÉ NETWORK

Creating Interactive Presentations for Teens

DEVELOPMENTAL CHARACTERISTICS

In general, teens are:

- Transitioning to abstract thinking.
- Able to hypothesize, propose solutions, and evaluate evidence.
- Developing ability to understand and grapple with complex issues.
- Feel deep social responsibility; are interested in playing a role in bettering the health of nature and society.
- Concerned about what the future holds for them personally.
- Self-conscious; concerned how he/she is perceived by others.
- Interested in understanding:
  - Your career pathway
  - What your daily life on the job is like
  - What you are passionate about
  - Your academic experience
  - The ways in which your work impacts society

STRATEGIES

- Utilize lively discussion, activities, stories, and cooperative learning groups.
- Ask questions and engage the audience in ways that foster higher-level thinking and problem-solving skills.
- Use analogies that reflect student interest.
- Use activities that allow teens to practice science – create predictions, pose hypotheses, design investigations. You don't have to be a professional scientist or engineer to practice science and engineering.
- Bring equipment, artifacts, props – things that you actually use.
- Teens should be actively engaged most of the time (rather than passively sitting).

ALSO CONSIDER

- Teens should not sit still or listen passively for more than 10-20 minutes.
- Avoid giving a PowerPoint presentation.
- Avoid singling out individuals and making them feel different from others.
- Avoid talking "down" to this group – they need to feel adult-like.
- Utilize a questioning strategy to actively engage the audience. Consider beginning the presentation with a question – then plan a sequence of questions within the framework of your presentation.

Allison Brody, Denise Thompson – Explora, 2019

Language Strategies

Use examples. Refer to something that is like the thing you are talking about. *"This laser is a good example of ___"*

Use analogies. In what way is what you are talking about similar to something that is familiar to the audience. *"To understand how volcanoes work, you can think of ___"*

Use contrasts. In what way is the thing you are talking about similar to AND different from something that can be related to it? For example, compare and contrast a Ponderosa tree with a Christmas tree.

Use metaphors. Describe something with a word or phrase that is usually used to describe something completely different. *"This piece of equipment is a bit of a dinosaur."*

Use universal concepts. Tapping into universal ideas and deeply personal constructs is a powerful way to make a topic meaningful and relevant. Universal concepts include love, family, safety, home, hate, survival, suspense, valor, morality, patriotism, power, revenge, etc.

Show cause and effect. People are hard-wired to look for cause and effect explanations – what things cause other things to happen.

Use active verbs.

Link science to stories about people

Use a contrived situation. A great way to get your audience to actively think about and apply the concepts you are presenting – for example, in a presentation about wolves, ask "what would happen if there were no predators?"

Activity Strategies

There are different ways of actively engaging your audience, including:

- A hands-on activity. Characteristics should include one or more of the following:
    - Colorful, moving, kinesthetic
    - Surprising, inspire questions
    - Emotional involvement
    - Manipulatives
    - The possibility of multiple outcomes
    - Learner-driven – learners are thinking, doing.
    - Learners have the opportunity to create, hypothesize, test variables, problem-solve, use and interpret data
- A demonstration
- A discrepant event – something happens that is discrepant to what you expect to happen
- A story – with a beginning, a middle, and an end; tension; a hero; resolution.

Some Resources for Activity Ideas:

- https://tryengineering.org/
- http://www.discovere.org/our-activities
- https://www.asceville.org/lessons.html
- https://www.globe.gov/
- https://www.nasa.gov/offices/education/about/index.html
- https://studio.code.org/projects/public
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- https://www.inaturalist.org/
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