The Practice of Science Talk

Noreen Habana
Bad Axe Public School
http://bahs.badaxeps.schooldesk.net/
ms.nhabana@gmail.com
Science Talk about Science Talk
Science Talk Rules

1) Keep conversation on science topic currently being discussed.
2) Speak loudly and clearly enough for others to hear.
3) Agree OR disagree with an explanation.
4) Put downs are not acceptable.
5) Respect other people’s ideas and comments.
6) Take turns speaking, no blurting out.
7) Pay close attention to what others are saying.
8) Base your argument on evidence or information from the lesson, reading, or notes.
9) Listen to all presenters.
10) Comment appropriately on the last statement before adding your thoughts.
Science Talk about Science Talk

Why are you interested in science talk?
Science Talk about Science Talk

What do you know about science talk?
Science Talk about Science Talk

What concerns or uncertainties make you apprehensive about using science talk?
A chemistry class observed that when they burnt a steel wool, small metal pellets formed and the steel wool gains mass. In another lab, they noticed that when two chemical solutions were mixed and stoppered, a somewhat clumpy white precipitate formed. The mass did not change. Some students insisted that mass stays the same in a closed system except when there’s a chemical reaction.

What should a teacher do next?
Earth Science Case

A class has just completed an activity on lunar phases. During a class discussion, a few students comment that the phases are due to the Earth’s shadow cast on the moon. A couple of students also comment the Earth is flat.

What should a teacher do next?
Science Talk Video

Source: https://eleducation.org/resources/classroom-protocols-in-action-science-talk
Science Talk Video

1) What did you observe?
2) What are your thoughts or questions?
Why Science Talk-Small/Whole Group Collaboration

1. Fostering Student Talk and Classroom Dialogue
2. Science Talk: A Tool for Learning Science and Developing Language
3. Talk Science Primer
4. Never Say Anything a Kid Can Say
Why Science Talk Articles

1) Fostering Student talk and Classroom Dialogue [Link]

2) Science Talk: A Tool for Learning Science and Developing Language [Link]

3) Talk Science Primer [Link]

4) Never Say Anything A Kid Can Say [Link]
First Year Science Talk in Middle/High School
Science Talk Video

1) What did you observe?
2) What are your thoughts or questions?
1) Based on discussions, videos, articles what would you say is the psyche or soul of Science Talk? In other words, what would cultivate culture of science talk in a classroom?
Student Engagement in Science Talk

2) What might inhibit students from participating in science talk?

3) How can we increase student participation in Science Talk?

4) How to encourage student discourse?
2) How can we increase student participation in Science Talk?
   a) Science talk rules
   b) Talking object to identify speaker
   c) New speaker first to involve everyone
   d) Activity/investigation prior to talk (Forum, phenom. Modeling, lab, notebook expectations to reason)
Student Engagement in Science Talk

3) How to improve content of discussion?
   a) Plan questions ahead of time
   b) Provide materials to model ideas
   c) Probe for clarification and to guide thinking
4) How to encourage student discourse?
   a) Respond to last comment before adding to the conversation.
   b) Student directly address another student.
   c) Work at your student comfort level while pushing a little further each time.
Talk Moves

https://www.nsta.org/conferences/docs/2015SummerInstituteElementary/NineTalkMovesFromTERC.pdf
Revisit Earth Science/Chemistry Cases

Discuss how we could conduct a science talk for each case.

a) Chemistry - What to do about obvious disregard for evidence?

b) Earth Science - What to do about persisting misconceptions and interesting distractors?
Put it to Action: Plan your Science Talk

1) Science Talk Rules
2) Talk Moves
3) Activities to promote reasoning and discourse
Teaching Resources for Science Talk

- NGSX - [https://www.ngsx.org/](https://www.ngsx.org/)
- Modeling Instruction in Michigan - [https://www.mimodelinginstruction.org/](https://www.mimodelinginstruction.org/)
- American Modeling Teacher Association [https://modelinginstruction.org/](https://modelinginstruction.org/)