

Ohio Standards Connections

Research

Benchmark A

Formulate open-ended research questions suitable for inquiry and investigation and develop a plan for gathering information.

(Grades 5 - 7)

Indicator 1

Generate a topic, assigned or personal interest, and open-ended questions for research and develop a plan for gathering information.

(Grade 7)

Lesson Summary:

Students will create a list of potential research questions that stem from their reading of science fiction. These student-generated questions will be posted in the classroom, and as the reading progresses, additional questions may be added. When it is time to begin the research process, students may select a research question from this class list.

Estimated Duration: 20 minutes.

Pre-Assessment:

Provide students with a list of broad topics such as science fiction, space travel, undersea travel or genetics. Ask students why the topics are not suitable for research; then have the students brainstorm ways to narrow the topic. Record their narrowed topics on an overhead transparency or chart paper. Discuss with students what they think makes a topic suitable for further research. Choose one of the narrow topics from the brainstorming list and ask students to explain why that topic is now suitable.

Post-Assessment:

Observe students as they brainstorm narrow topics and provide explanations for support. Determine whether they understand the purpose for and concept of narrowing a topic. If the observation shows that students have little experience with narrowing a topic, conduct a guided lesson before continuing with developing research questions.

Provide students with a checklist or rubric that helps them see how a research topic is made suitable (e.g., needs to be narrow, interesting and justifiable). In addition to the checklist or rubric, give the students 10 possible research topics and have them identify and explain why they meet or do not meet the criteria of a suitable topic. This evaluation of the topics may be assigned to individual students or small groups of students.

Scoring Guidelines:

3 = The topic is sufficiently narrow to be sensitive to the length of the research paper and the amount of time allowed to complete it. It also is interesting enough to engage the reader at the same time that it stimulates and challenges the researcher. The topic is finally one that is supportable with concrete data or facts and not dependent on belief or speculation.

2 = The topic is weak in one of the guidelines above.

1 = The topic is weak in two of the guidelines above.

0 = The topic is weak in all three guidelines or no attempt was made to follow them.

Instructional Procedures:

1. Share a newspaper article related to an issue often addressed in science fiction (e.g., robotics, cloning). Model through a think-aloud how you have many questions in your mind as you are reading the article.

Example: Topic – robotics

Questions

- How can robots currently help make our lives easier?
 - How common will it be for people to have robots in their homes ten years from now?
 - What new problems will be created if robots are a common part of our lives?
2. Divide a piece of chart paper into two columns – the one on the left should be labeled "Topics" and the one on the right should be labeled "Questions." Record the topic you've chosen to use in your think-aloud in the appropriate column, then write the questions you have in the right column. It is important to list multiple questions related to the topic. Ask students to suggest additional questions for this column.
 3. Ask students to think about the science fiction books they are reading. Have them engage in a think-aloud as they share topics and questions generated through their reading. Add these to the class chart. Once a student suggests a topic, other students should be encouraged to think of additional questions.
 4. Tell students that they are to continue to think about topics and questions generated from their reading. Distribute the worksheet, "Possible Questions for Further Research," and ask students to record their questions on this form. They should be reminded daily to add topics and questions to their copies of the worksheet.
 5. Every few days, take time for students to share some of their topics and questions listed on their individual charts. Add these to the class chart that is posted in the classroom.
 6. When it is time for the research portion of this unit, refer students to the class chart and their individual charts. These may be used as springboards for creating research questions.

Differentiated Instructional Support:

Instruction is differentiated according to learner needs, to help all learners either meet the intent of the specified indicator(s), or if the indicator is already met, to advance beyond the specified indicator(s).

- Some students might continue to have difficulty with the concept of question generation, even after the teacher modeling and class discussions. Work with these students individually or in a small group to give them more guided instruction. It may be necessary to read part of their science fiction book with them and, together, generate questions for research.

Homework Options and Home Connections:

- Ask students to find newspaper and magazine articles that are related to science fiction and bring them to class to share with their peers.
- Suggest that students try the think-aloud with someone in their home.

Interdisciplinary Connections:

Many of the questions generated through the reading of science fiction are related

to content area studies. If this is the case, help students make the connections between the content areas and what they are doing in this unit. Consider sharing some of their questions with the appropriate content area teacher.

Materials/Resources Needed:

For the teacher: Access to overhead projector, several short newspaper articles about science-fiction related topics, chart paper, marker and copies for every student of Blackline Master 1.

For the students: Short articles from newspapers, magazines, etc. that relate to issues found in reading science fiction and Blackline Master 1.

Attachments:

- Possible Questions for further Research (Blackline Master 1)