

Deep Dive into the [Technology Model Curriculum](#): Session Activity

Read the Technology Model Curriculum entry below for grade band 3-5. As you read through the content in this entry, think about the following questions:

- *What types of information did you find in the model curriculum entry?*
- *Which parts were the most useful?*
- *Was there anything that was unclear? If so, what?*

STRAND: DESIGN AND TECHNOLOGY

Topic 2: Identify a problem and use an engineering design process to solve the problem.

3-5.DT.2.a. Critique needs and opportunities for designing solutions.

Expectations for Learning

LEARNING PROGRESSION

In grades K-2, students learned what a design process was and applied a simplified design process to solve a problem. In grades 3-5, students plan and implement a design process to solve a problem, which includes a focus on the process of identifying a problem to solve. In grades 6-8, students will apply a complete design process to solve a problem, including research and consideration of criteria and constraints.

IMPORTANT CONCEPTS

- When identifying problems, it is important to identify the needs and opportunities to be able to create efficient and effective solutions.

KEY SKILLS/PROCEDURES

- Identify a problem to solve, thoroughly explaining the problem.
- Identify any limits given to the problem that will need to be considered in the solution.

Content Elaborations

CLARIFICATIONS

Identify classroom problems or school problems that could be solved using a design process. Analyze a problem and determine possible needs for a solution. Students may be able to find problems to solve by looking for ways to design seating, classroom processes that need to be refined or looking to overall school or community problems.

Erosion control or algae growth in an aquarium or pond may be ideas that could be seen on

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school grounds or in the community and have connections to grade-level science and social studies content.

Other opportunities for designing solutions can be found in novels students are reading in other content area studies. Are the characters facing problems that students could help the characters solve? Could they find solutions on behalf of a character in a story they already are reading?

As students work to identify a problem, they must ask themselves questions about the needs and opportunities that exist for designing a solution. Is there already a solution for this problem? If so, can they improve on the solution? If there is not a solution, what do they need to do to solve the problem?

CONTENT FOCUS

This content statement focuses on students identifying problems to solve. (This will tie into the next content statement of using a design process to solve problems.)

Career Connections

CAREER AWARENESS

Using the identified problem and potential solutions, students discuss what careers exist that are aligned to the solutions they have identified. Are there people who implement these solutions or solve these problems? Invite professionals from one of the career fields discussed to speak with the class about their jobs and the steps they took to prepare for their careers. Have a class discussion on how careers are continually changing based on new solutions people find to existing problems, especially in the technology field.