LESSON 2: GAME DESIGN 101

Goal: Students will analyze and solve problems in order to design their own game course.
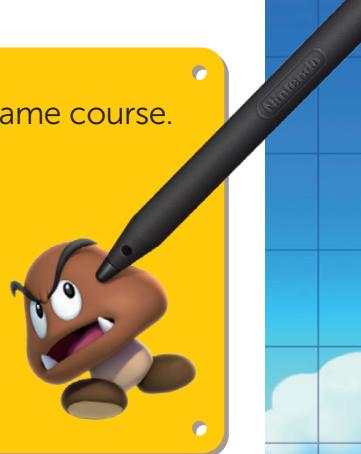
Time Required: Two to three 45-minute periods

Standards: NGSS K-2-ETS1-2; 3-5-ETS1-2

Materials Required: Index cards, graph paper, Student Activity Sheet 2

Preparation: Write the physical obstacles listed in Step 2 on index cards. Each group will need one card.

Lesson Steps:

1 Explain that environments present different physical obstacles. Over time, people have developed tools to overcome these obstacles. For example, people who need to cross a river could build boats, construct a bridge, or even develop their swimming skills.

2 Divide students into small groups. Provide each group with an index card listing a physical obstacle. Each group will brainstorm ways that people have overcome this obstacle.

> A person wants to visit someone, but there is a mountain in the way.

> A person wants to cross an ocean.

> A person lives in a place that floods often.

> A person wants to land on the moon.

> A person wants to see what is on the ocean floor.

3 Distribute Student Activity Sheet 2. Explain to students that they will take on the role of game designers. Have students use the questions on the activity sheet to plan their own game course. Tell them to use their imaginations as well as their ideas from the earlier brainstorm.

4 Once students have developed their ideas, distribute graph paper so that they can draw and label their game course.

Real-World Connections:

> Provide inspiration by giving examples of objects that appear in *Super Mario Maker* for Nintendo 3DS courses, such as warp pipes and trampolines.

> Did you know the original *Super Mario Bros.* game was designed using graph paper? Share this video with your class to learn more: **http://bit.ly/2vXPZsx**

Extension Activity:
After students design their own game course, they will write a story from a game character's point of view. What does the character think and feel as he or she completes the task?

FINAL PROJECT

For their final project, students will build a three-dimensional version of their game courses. Recommended materials include shoe boxes, construction paper, and paper towel rolls, but this can be customized based on the needs of the class.

1 Before students begin, work with the class to develop a list of success criteria for the project.

2 After students complete their game courses, ask them to reflect on the process of turning a two-dimensional drawing into a three-dimensional creation. What was challenging?

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Game Rated:

EVERYONE
E
ESRB
Comic Mischief

NAME _____

GAME DESIGN 101

It's time to design your own game course. Your video game character needs to move through this course to rescue your teacher! Use the questions below to help plan your game course.

PART A: PLANNING QUESTIONS

1 Where is your game course located? (e.g., *underground, underwater, in the sky*)

_____

2 Based on the setting you chose, what challenges will the player face in getting from one end of the course to the other? (e.g., *the player may need to break through rocks or walls*) _____

_____

_____

3 Based on the setting you chose, what tools would help the player complete the course? (e.g., *vines to swing from place to place, flippers to swim*)

_____

_____

PART B: TIME TO CREATE

Taking what you have learned, make a drawing of your course on graph paper and label the different obstacles and solutions you chose.