

Frogger Sample Lesson Plan
Day 4 – 50 minutes
Scalable Game Design summer workshop
June 2009



Note: **Red** links take you to portions of the tutorial. **Blue** links provide background information to aid in teaching.

1. Learning Objectives:

In this unit, students will create a simple but complete version of Frogger game while learning Agentsheets software program. Students will apply design process to identify objects “agents” and interactions “operations”. Throughout this unit, students will be introduced to basic [computational thinking](#), including basic object interaction, stacks, creating object instances, rule based programming, and message sending.

In this lesson, students will begin the second section of Frogger. Students will create a river agent, log agent and bridge agent. Bridge agent will be created as a log generator. Students will program game to communicate that the frog cannot swim – and will add sound effect. Students will use the transport computation thinking pattern to move frog on log.

2. Standards:

ISTE (International Society for Technology in Education) NETS (National Educational Technology Standards)

- # 1a apply existing knowledge to generate new products
- #4b plan and manage activities to develop a solution or complete a project.
- #4d use multiple processes and diverse perspectives to explore alternative solutions.
- #6c troubleshoot systems and applications.

ISTE NETS are referred to by CDE Performance Standards for Teachers #7- Technology
Please check with your district’s technology department to see if there are additional standards at the district or school level.

3. Anticipatory Set / Modeling: 5 minutes

Student work showcase: Select one of the student’s worksheets from the last lesson and project it on an overhead screen. Demonstrate what can be done so far on her/his worksheet. Compare this to a completed version of Frogger so students can see where they are headed. Inform students that today they will be adding the river, logs and bridges.

4. Teaching: 5 minutes

Input – Overview of project

Review four computational thinking patterns in Frogger: Today we will be using Transport.

- [Absorb](#): Trucks, turtles, and logs will need to be absorbed (erased) with truck absorber, log absorber, and turtle absorber agents.
- [Collision](#): Trucks collide with frogs. We will use a simple form of collision to deal with trucks colliding with frogs.
- [Generate](#): Trucks, turtles, and logs will need to be generated with truck maker, log maker and turtle maker agents.
- [Transport](#): Logs and turtles transport the frog. This slightly more advanced pattern will be used in part II of the Frogger tutorial.

Lead students through discussion - [What Do We Need To Add?](#) to complete the game.

5. Guided Practice / Monitoring: 35 minutes

Demonstrate how to open Agentsheets program and have students open saved versions of Frogger from last lesson. Check understanding of each student.

Remind students how to create a new agent. Demonstrate how to make a river and log agent and how to set up behavior of log to move left to right and disappear at right side of worksheet like trucks. [The Log Agent](#) and [The River Agent](#)

Demonstrate how to modify the frog behavior so that when the frog jumps into the water, “I cannot swim” is printed on screen, a splash sound is played, and the frog dies. Students work individually to program new frog behavior.

[Play Test: Testing the Drowning behavior](#)

Check for student understanding.

Demonstrate how to create bridge agent and set up bridges as log generators. Allow students time to complete agents and program behaviors and play test the game.

[The Log Maker Agent](#) and [Behaviors for the Log Maker Agent and Log Agent](#)

Students to do a play test. This could be used to check for individual student understanding

[Play Test: Testing the Log and Log Maker](#)

Lead discussion about using transport for frogs on logs. Show short video to highlight the order of movement required to have frog and log move together.

[Getting the Frog to Move with The Log](#)

Allow students time to program behaviors and play test the game.

[Play Test: Testing Frog Log Interactions](#)

Check for student understanding.

Students should save the worksheet periodically and check with the reset button to verify that it worked. [IMPORTANT: Saving the Worksheet](#)

6. Closure: 5 minutes

Restate the scope of the project. Tomorrow we will be finishing and publishing the project. We will add turtles, and turtle generators and the grotto. We will be using the transport, absorb and generate computational thinking patterns.

7. Extension/ Remediation – students can edit their agents at any time. As an extension continue setting up guidelines for scoring for later programming.