

Sample Frogger Lesson Plans
Day 1 – 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 create a new Agentsheets worksheet, a frog agent and will be able to move the frog agent in all directions.

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

Quickly demonstrate Frogger – state the objective of the game and allowed moves. Select one student to play Frogger while it is being projected on overhead for others to see.

4. Teaching: 10 minutes

Input – Overview of project and Agentsheets

Discuss Rubric for grading. Distribute copy to students (optional). Explain how student’s projects will be graded at the end of the week.

Describe components of Agentsheets:

- Gallery- where agents are
- Worksheet – where game is created
- Behavior – how to tell each agent what to do

And four computational thinking patterns in Frogger:

- [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.

Have students decide what the nouns (the agents) and the verbs (the operations) of Frogger are. We will begin by creating the most prominent noun today – the frog, and his movements. Other agents will be created throughout the unit.

5. Guided Practice / Monitoring: 30 minutes

Demonstrate how to open Agentsheets program and have students make a new worksheet.

[Creating A New Project](#)

Check understanding of each student.

Demonstrate how to create a new agent and have students make a frog agent.

[Creating the Frog](#)

Check understanding of each student.

Demonstrate how to create a new worksheet and have students open a new worksheet.

[Creating a Worksheet](#)

Then have students place frog on worksheet with pencil tool. Students should save the worksheet and check with the reset button to see if it worked.

[IMPORTANT: Saving the Worksheet](#)

Then have students run the program to see what happens (nothing yet!)

[Play Test: Running the Program](#)

Check understanding of each student.

Demonstrate how to edit the behavior of the new agent and have students make frog agent movements correspond to the arrow keys. [Programming the Frog Movement](#)

Ask students to re-run the program to see if movement works.

[Play Test: Testing The Frog Movement Again](#)

Check understanding of each student.

6. Closure: 5 minutes

Restate the scope of the project. Tomorrow we will be creating the street and truck agents and learning generation and absorption of trucks.

7. **Extension/ Remediation** – students can edit their agents at any time. Encourage students to spend a short time on the initial creation and edit later as desired. optional activity Optional activity: Have students work individually on “Bridge-builder” to get an understanding of components of Agentsheets and the types of computational thinking patterns