

### Eaton Johnson Middle School Lesson Plan

<b>Lesson Title</b>	Hare vs. the Tortoise (Experimental Design)
<b>Teacher</b>	Mrs. A. Walker
<b>Grade Level and Class Period:</b>	7 <sup>th</sup> grade/ all classes
<b>Date:</b>	
<b>Essential Question:</b>	What is the relationship between the dependent and independent variable?

<b>A</b>	<b>Activity Summary</b>	<b>In this lesson, students will</b> identify and create questions and hypotheses, identify dependent and independent variables, and form a conclusion that can be answered and tested through scientific experimental investigation using the hare and tortoise Alice program.
<b>C</b>	<b>Curriculum</b>	<b>NCSCOS Objective: 1.01-1.09</b> Students will analyze experimental design.
<b>T</b>	<b>Technology</b>	<b>The following Technology resources will be used</b> Alice program, computer, and LCD projector.

#### Activating Strategies/Focus and Review

Students will practice using Alice creating new worlds and then we will review experimental design: problem, hypothesis, procedures, results and conclusion.

**Technology/ Testing Vocabulary:** Alice programming keys, dependent variables, independent variables, hypothesis, and experimental design

#### Cognitive Teaching Strategies (Teacher Input)

Will review the scientific method before beginning the Alice world with students. The Alice world will reinforce student's previous knowledge of the scientific method by making and conducting their own experiment.

**Student Practice (class)** Students will work in groups and list the parts of the scientific method and conduct their own experiment. The Alice world will reinforce the information and help guide them through the scientific process. Students will complete a formal lab write-up of their experiment including graphs of their results.

#### Summary Strategies

This lesson will help reinforce an important concept that student's struggle with throughout school. The scientific method is a concept that is needed throughout the student's academic career and this lesson uses visual 3D animation to create an experiment.

**Students that show interest in creating their own Alice worlds can join an Alice afterschool program club.**

**Student Practice (homework)** Students will be finish their formal lab write-up and turn it in the next day.

**Assessment of Student Progress** Test will be given on Friday to review the parts of the scientific method and dependent and independent variables.