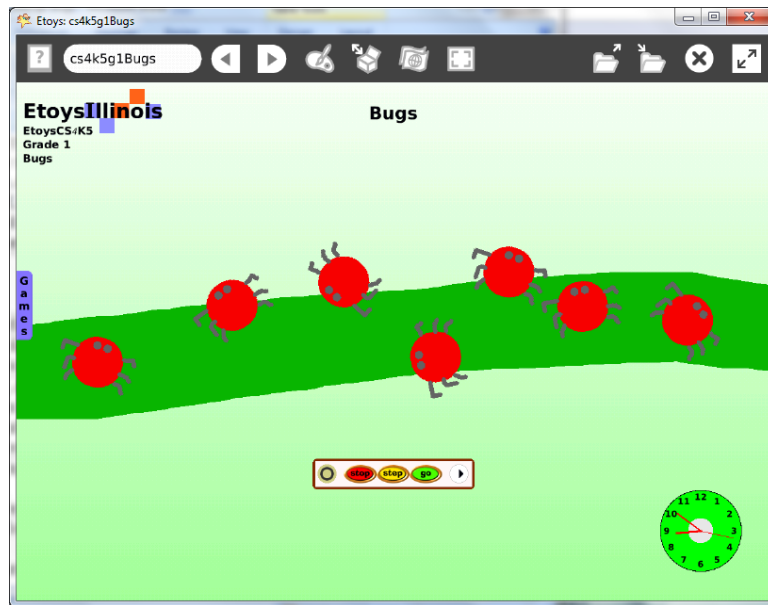


EtoysIllinois
 EtoysCS4K5
Grade 1
Bugs

Description: Students will:
 Draw a bug and script it to turn, go forward, and bounce.
 Copy the bug and find that the copies will have the original scripts.
 Learn and apply a vocabulary of quantity, locations, and time: top and bottom, directions (up, down, left, right), and concepts such as more than half, less than half, above the line, below the line, one minute, one second, half a minute/thirty seconds.
 Estimate when most/least insects are in one area of the screen stop the script, and count them.
 Add a clock from Supplies.
 Add a random number generator tile to a turn and/or forward tile and observe how the insect moves differently.

Project View



Subject: Math, Science

Etoys Quick Guides Click the question mark in Etoys to open set of interactive tutorials for basic tools and techniques.

Vocabulary: Up, down, left, right, more, less, fewer, most, least, estimate, turn, more than half, less than half, above, below, top, bottom, high, low, random

	number, numbers, counting, wide, narrow, biggest, smallest, thick, thin, colors, inside, beside, between, near, far, time, minutes, seconds
<p>Lesson 1:</p> <p>Paint Tools: Brushes</p> <p>Paint Tools: Color Palette</p> <p>Paint Tools: Bucket Tool</p>	<p>Learning to use the paint tools; repeat as needed.</p> <p>Give students time to play with paint colors, brush sizes, paint bucket, and erasers.</p> <p>Learning to use the mouse and the cursor is part of the lesson.</p> <p>Talk about what is on their computer screen using the lesson vocabulary.</p> <p>Guide students to experiment with different colors and brush sizes: choose the biggest brush, choose the smallest brush, choose brush 1, draw a line with the biggest brush, draw a thin green line, use your favorite color, and find another shade of your favorite color.</p> <p>Near the end of class, give students directions to follow. For example, use the big brush to paint a dot of their favorite color in the middle of the screen and then use a smaller brush to draw six lines that touch the dot. Discuss what it could be. Do they all look alike? How are they the same and how are they different?</p> <p>Learning to use the paint tools takes time because there are so many combinations of color, line, and shape to enjoy and to control. Many students will enjoy filling the screen with buckets of color, over and over again. Let them. Ask them to name the colors and to describe what they are doing. Some students will scribble with the brushes. Let them. Large motor and small motor control are still developing and students need time to experiment and practice. It is kinetic learning and can not be rushed.</p>
<p>Lesson 2:</p>	<p>Draw a bug.</p> <p>When students are confident enough with the paint tools to paint something that can be called a bug, start a discussion about the bugs they have seen and what they have noticed about them. The discussion should use the vocabulary body, legs, wings, eyes, size, and color.</p> <p>Ask students to describe a bug and while they describe it, other students paint what they are hearing described. Let students look at all the</p>

<p>Navigator Bar: Keep Find Projects</p>	<p>different ways that description can be met. Discuss. Give students time to draw many bugs on their screen. If there is one with six legs, call it an insect. Repeat this lesson until students are comfortable with the ideas and can draw an insect within the first ten minutes of class.</p> <p>Draw one bug, click keep to close the paints. Make each new kind of bug with a new paint palette so that each bug can be picked up and moved. Give students time to create several bugs.</p> <p>Spend time moving the bugs to different parts of the screen; ask students to use the vocabulary of location to describe where they put their bugs.</p> <p>Open paints again and paint a line across the world. Ask students to put most of the bugs above the line, below the line, move the line to the top of the screen, to the bottom of the screen, put all the bugs in the lower right corner, etc.</p> <p>Sort the bugs: bugs they want above the line, bugs they don't want anymore below the line. Get out a trash can from Supplies and drop bugs into it to throw them away.</p> <p>Keep this project for future use. Students should type their name and add the word bug, no space is needed but it will help children read for example: KateBug</p>
<p>Lesson 3:</p> <p>Halo Handles: Make the handles show</p> <p>Halo Handles: Viewer</p>	<p>One Bug Create scripts for a bug drawn in a previous lesson.</p> <p>This lesson introduces the halo of handles. Right clicking with the mouse is a skill that needs to be taught and practiced. Right button/left button, some children do not know which hand is which and the mouse buttons are a finer distinction of that concept.</p> <p>Right click on the world to open a halo of handles, left click the aqua eye. The script viewer opens and one of the tiles is world's color. Click in the small gray square to open a paint palette that will change the color of the background. Give students time to experiment with colors.</p>

Script Tiles: Forward by	<p>Ask students to right click on one of their bugs and choose the aqua eye to open a viewer of scripts for the bug.</p> <p>Ask students to find the top tile (bug make sound croak) and click on the yellow dot exclamation point.</p> <p>Ask students to click on the next tile's yellow dot (forward by) and then next (turn by). Give time for them to experiment with these three tiles. It will be noisy.</p> <p>Ask students to make a pattern from these three tiles. Croak, forward, turn, and repeat. Croak, croak, forward, forward, turn, turn, etc, etc. Ask students to think of a pattern they can tell the class to do.</p> <p>When students are familiar with these ideas, show them how to drag a forward by tile out onto their screen. The same exclamation point is in the top of the scriptor that forms: let them click it. Show them the green clock and let them click it. Discuss.</p> <p>Change the forward number to 4, 3, 2, and 1. Ask students to describe what they see happening to the motion. Ask them what will happen when they change to zero. Change the forward number to: 10, 20, 30, 40 etc. Or change the numbers by adding 5 each time. Discuss.</p>
Script Tiles: Turn by	<p>Drag out a turn by tile and put it in the scriptor already there or drop it to make a separate script, either will work. The tiles in separate scripts will allow them to experiment with each one at a time and together. Click on a number in the script and change it. Experiment with numbers.</p>
Script Tiles: Motion Bounce	<p>Ask them to stop the scripts when the bug is above/below the line. Add a bounce tile to the script and change the forward by number so that the bug reaches the edge of the screen. Experiment. Discuss.</p>
Halo Handles: Size, Color, Copy	<p>Many Bugs Make copies of the bug. Let them make as many as they want. All the copies will have the same script. Ask them how many bugs they made.</p> <p>Change the colors of bugs with the Repaint tool in the halo of handles</p>

<p>Supplies: All Scripts</p> <p>Supplies: Object Catalog</p>	<p>and open a Viewer for the bug, drag out a script and change the numbers too so that the bug moves differently. Experiment. Discuss.</p> <p>Use an All Scripts button from Supplies. Give children time to experiment. Ask them to use the stop button when most of the bugs are below the line, near the top of the screen, on the right etc.</p> <p>Open the Object Catalog in Supplies, click on Just for Fun and drag an analog clock into the project. Ask questions such as; will more bugs be above the line or below the line after 15 seconds? 30?</p> <p>Ask students to put all of their bugs in a stack one on top of the other and click go. Do they all go the same direction? Describe. Will they be in the same locations if the bugs are stacked again? Predict, experiment. Explain. Stack the bugs again and time how long it takes for them to all be above the line. Ask students to estimate how long it will take based on what they have seen in their project experiments. Ask will everyone's project take the same amount of time? Discuss.</p> <p>Keep the project. It already has a name.</p>
<p>Lesson 4 Script Tiles: Random Numbers</p>	<p>Add a random number generator tile to the forward and/or the turn script that has already been created for one of the bugs.</p> <p>Ask students if they can see a difference in the motion. Discuss Change the numbers in the tiles, experiment, describe, discuss. Share favorite motions by telling the numbers used and having all students use those values. Discuss and compare.</p> <p>Give them time to experiment with different values in the tile, to look at other students' projects, and try to indentify the one using random numbers. Experiment, discuss.</p>
<p>Standards</p>	<p>Common Core Standards Mathematics: 1.MD.3; 1.OA.5; Language Arts: SL.1.4</p> <p>Bloom's Taxonomy/Cognitive Domain: Knowledge: describes, knows, names Comprehension: estimates</p>

	<p>Application: uses, constructs, changes Evaluation: compares, describes</p> <p>NETS 1. a 4. a 6. d</p>
Resources	<p>Etoys Help Quick Guides: always available in Etoys. Open Etoys and click the question mark to open a set of interactive tutorials of basic tools and techniques.</p> <p>www.etoysillinois.org projects, lesson plans, software download www.mste.Illinois.org more math, science, and technology resources www.corestandards.org Common Core Standards www.squeakland.org software and Etoys projects www.nctm.org Standards and Focal Points for each grade level</p>
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