



## Grade 2

### Northern Corn Rootworm Beetle

<b>Description:</b>	<p>Students will:</p> <p>Draw an insect.</p> <p>Make a script with forward and turn tiles.</p> <p>Construct new tiles by adding joystick's left/right and up/down to the forward and turn tiles.</p> <p>Add a stamp tile to show the insect's forward direction.</p> <p>Learn to apply headings in motion.</p>
<b>Project View</b>	
<b>Subject:</b>	Mathematics, Science
<b>Etoys Quick Guides</b>	Click the question mark in Etoys to open the set of interactive tutorials for basic tools and techniques.
<b>Vocabulary:</b>	Insect, head, thorax, abdomen, six legs, heading, size, enlarge, reduce, scale factor
<b>Lesson 1:</b>	Discuss insect's characteristics: head thorax, abdomen, and six legs.
<b>Supplies:</b> Digital Images	Provide a desktop folder of digital images for students to select butterflies, dragonflies, bees, etc.

<p>Script Tiles: Scale Factor</p> <p>Paint Tools</p> <p>Supplies: Grab Patch Supplies: Text</p>	<p>Change the size of the digital image. The digital image details can be enlarged using the scale factor tile. Open its Viewer, click on basic and choose: geometry. The scale factor can be changed with up/down arrows and the tile can remain in the Viewer.</p> <p>Give students time to experiment with scale factors. Sizes smaller than 1 use decimals. Find the limits of change and then select a good size to see details for their insect. The finished drawing's size can be reduced using its scale factor tile. Choose a good size for the project window.</p> <p>Draw or trace the overhead view of an insect. This example uses an insect common in Illinois.</p> <p>It is good practice to include website information for digital images, even ones that are trace. Type it with Text or use a grab patch tool.</p> <p>Keep the project. Name it: namebugjoystick</p>
<p><b>Lesson 2:</b></p> <p>Script Tiles: Forward and Turn</p> <p>Supplies: Joystick Control</p>	<p>Open the project from Lesson 1.</p> <p>Use forward and turn tiles to make a script for the insect.</p> <p>Change the script so a joystick to controls the insect's motion. Get a joystick from Supplies, open a Viewer, and click on basic. The menu that opens includes a special category for the joystick.</p> <p>Construct a new tile by adding: joystick up down to the forward tile. Add: joystick left right to the turn tile. Start the script ticking and experiment with the joystick.</p> <p>Keep the project.</p>
<p><b>Lesson 3:</b></p> <p>Script Tiles: Stamps</p> <p>Script Tiles: Pen Use</p> <p>Menus: Button to Fire a Script</p> <p>Menus: Simple</p>	<p>Open the project from Lesson 2.</p> <p>Add a stamp tile to the script so that the path of the insect can be seen.</p> <p>Make an eraser to clear pen trails/stamps. Use the clear all pen trails tile. Click on the white menu in the Scriptor and choose: button to fire a script. The new button's label can be changed by opening a halo of handles for it and choosing its white menu.</p> <p>Add a detailed watcher for heading and use it to draw shapes such as</p>

and Detailed Watchers	<p>square, letters, or numbers.</p> <p>Keep the project: namebugjoystickfinal          Give students plenty of time to experiment with their project. Give them time to try projects by classmates. Challenges: draw circles and other geometric shapes, letters, and numbers.</p> <p>Discuss what they find out about headings.</p>
<b>Standards:</b>	<p>Common Core Standards          Mathematics: 4.MD.5.a.b</p> <p>Bloom's Taxonomy/Cognitive Domain:          Knowledge: describes          Comprehension: gives examples          Application: uses</p> <p>NETS          1. a</p>
<b>Resources:</b>	<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><a href="http://www.etoysillinois.org">www.etoysillinois.org</a> projects, lesson plans, software download  <a href="http://www.mste.Illinois.org">www.mste.Illinois.org</a> more math, science, and technology resources  <a href="http://www.corestandards.org">www.corestandards.org</a> Common Core Standards  <a href="http://www.squeakland.org">www.squeakland.org</a> software and Etoys projects  <a href="http://www.nctm.org">www.nctm.org</a> Standards and Focal Points for each grade level</p>
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