

# TRAINER PREPARATION GUIDE 4.5: RESPOND TO THE TOUCH INTERFACE

## Lesson Objective 4.5:

Respond to the touch interface.

## Required materials to teach this lesson:

1. Microsoft® Word or similar word processing tool and access to the Internet.
2. Microsoft® Expression® Web 4 (preferred) or Notepad (Notepad++ is preferred; it provides real-time feedback for writing JavaScript). Download: <http://www.notepadplusplus.org/> (Internet Explorer® 9 or later).
3. 98-375-ENU-4.5-LP
4. 98-375-ENU-4.5-IC
5. 98-375-ENU-4.5-ICKey
6. 98-375-ENU-4.5-PC

## Preparation tasks

### Technical preparation activities:

1. None

2. **Vocabulary:**

**touch gesture:** a movement of a finger or stylus over a control or object on the screen.

**test:** to check program correctness by trying out various sequences and input values.

3. **Additional readings and resources:**

**MSDN®:**

**Touch Gestures (Windows® Embedded Compact 7):** <http://msdn.microsoft.com/en-us/library/ee499124.aspx>

**JavaScript, Ajax, & DOM:** <http://msdn.microsoft.com/en-us/ie/dd420501>

**Other resources (books, e-reference):**

**Mobile Touch Events in MooTools 1.3:** <http://davidwalsh.name/mootools-touch>

**jQuery:** <http://archive.plugins.jquery.com/plugin-tags/gesturestart>

Note: Support for HTML5 and CSS3 is changing and developing quickly. The list of resources is current as of January 2012. Check resources for current and up-to-date information at the time of classroom use.

### Instructor computer setup:

1. A workstation with Microsoft Word or similar word processing software.

### Instructional preparation activities:

1. Review the instructor suggestions in the notes view of Microsoft PowerPoint® presentation 98-375-ENU-4.5-LP.
2. Make copies of student documents available as needed.
3. Complete the instructions for the demonstration before class. Here is the sample code shown in the PowerPoint presentation:

```
var width = 100, height = 200, rotation = ;  
node.ongesturechange = function(e) {  
  var node = e.target;  
  
  // scale & rotation are relative values, so we wait  
  // to change our variables until the gesture ends  
  
  node.style.width = (width * e.scale) + "px"; node.style.height = (height *  
  e.scale) + "px"; node.style.webkitTransform = "rotate(" + ((rotation +  
  e.rotation) % 360) + "deg)"; }  
  
node.ongestureend = function(e) {  
  // Update the values for the next gesture  
  
  width *= e.scale; height *= e.scale; rotation = (rotation + e.rotation) %  
  360; }
```

### Lesson sequence (50 minutes)

#### Activating prior knowledge/lesson staging (5 minutes):

Instruct students to answer each question in the “Guiding questions” section of the In-class Activity document or in their personal class notes.

#### Guiding questions:

1. **What does it mean to “capture” an event?** In web design, the flow of the program is determined by events. When an event is triggered (a user touches the screen with one or two fingers), an event listener that is waiting to capture this event starts processing an appropriate response. It is important to understand that not all touch screen events are mapped to traditional events; two examples of this are orientationchange and gesture events.
2. **After you capture an event, how do you respond to it?** Every event has an “event type,” which is a string that specifies the kind of event that occurred, such as gesturestart and gestureend. These events trigger an event handler—the code that responds to each event. New event handlers can be registered and invoked when an event of the specified type occurs.

#### Lesson activity (35 minutes):

1. Teacher instruction
  - a. Use the PowerPoint presentation 98-375-ENU-4.5-LP to review the process of using touch input and gestures.
  - b. An In-class Activity document is available for use as needed.

**Lesson review (10 minutes):**

1. Lead students in a discussion of the guiding questions.
2. During and after the discussion, have students list any questions they have or any topics with which they would like more assistance.
3. Have students work in pairs to answer the additional questions written by students. Answer any questions that cannot be answered by students, or collect them for follow-up later.
4. Provide the Post-class Activity document for additional review.