

Lesson plan – 12

Level 3

```
onBoardEvent (▼ accelerometer, ▼ "data", function() {  
  //This if-statement detects when the board is tilted forward  
  if ( accelerometer.getOrientation(▼ "pitch") < 0 ) {  
    colorLeds [0] .on();  
    colorLeds [9] .on();  
    colorLeds [4] .on();  
    colorLeds [5] .on();  
    //1) When the board is tilted forward, turn off LEDs 4 and 5  
  }  
  //This if-statement detects when the board is tilted backwards  
  if ( accelerometer.getOrientation(▼ "pitch") > 0 ) {  
    colorLeds [0] .off();  
    colorLeds [9] .off();  
    //2) When the board is tilted backwards, turn on LEDs 4 and 5  
    colorLeds [4] .off();  
    colorLeds [5] .off();  
  }  
};
```

Activate Windows

Activate Windows

Level 4

```
var roll = accelerometer.getOrientation(▼"roll");  
onBoardEvent(▼accelerometer, ▼"data", function() {  
  // 1) Get the `roll` property of the accelerometer and store it in a variable  
  //2) If the board is tilted left: update the screen to say "Left"  
  if ( accelerometer.getOrientation(▼"roll") < 0 ) {  
    setText(▼"direction", "left");  
  }  
  //3) If the board is tilted right: update the screen to say "Right"  
  if ( accelerometer.getOrientation(▼"roll") > 0 ) {  
    setText(▼"direction", "right");  
  }  
}
```

Level 5

```
var pitch;  
var ballX;  
var playerY;  
setProperty(▼"ball", ▼"y", randomNumber(50, 400));  
onBoardEvent(▼accelerometer, ▼"data", function() {  
  //This section moves the ball across the screen  
  ballX = getProperty(▼"ball", ▼"x");  
  ballX = ballX - 2;  
  setProperty(▼"ball", ▼"x", ▼ballX);  
  //This section moves the player up and down, but isn't finished  
  //Add your code here!  
  playerY = getProperty(▼"player", ▼"y");  
  pitch = getProperty(▼"score", ▼"x");  
  setProperty(▼"player", ▼"y", ▼100);  
}
```

Level 6

```
var steps = 80;
onBoardEvent(▼ accelerometer, ▼ "data", function() {
  //Increase the number of steps
  //Update the screen
  setProperty(▼ "stepsTaken", ▼ "text", ▼ steps);
  setProperty(▼ "person", ▼ "x", 5 * steps);
  //When the person reaches the flag, go to the victory screen
  if ( getProperty(▼ "person", ▼ "x") >= 230 ) {
    setScreen(▼ "congratsScreen");
  }
});
```

Level 7(a)

```
var movement = 0;
//the movement meter is triggered by a putton press
onBoardEvent(▼ accelerometer, ▼ "change", function() {
  //this increases the movement meter count
  movement = movement + 1;
  setText(▼ "score", movement);
  //this checks to see if the number of times the board has moved is equal
  if ( movement == 100 ) {
    setScreen(▼ "game_over");
    buzzer.frequency(350);
  }
});
```

Level 7 (b)

```
onBoardEvent(▼ accelerometer, ▼ "data", function() {  
  //This part of the code moves the car down the screen  
  var carY = getProperty(▼ "car", ▼ "y") ;  
  carY = carY + 1 ;  
  setProperty(▼ "car", ▼ "y", ▼ carY);  
  //1) Get the car's x position and store it in a variable  
  var carX = getProperty(▼ "car", ▼ "x") ;  
  carX = carX + 1 ;  
  setProperty(▼ "car", ▼ "x", ▼ carX);  
  setProperty(▼ "car", ▼ "x", ▼ carX);  
  FlagTest.checkFlags();  
});
```

Level 7(c)

```
onBoardEvent(▼ accelerometer, ▼ "data", function() {  
  setProperty(▼ "star1", ▼ "x", randomNumber(20, 300));  
  setProperty(▼ "star1", ▼ "y", randomNumber(20, 300));  
  setProperty(▼ "star2", ▼ "x", randomNumber(20, 300));  
  setProperty(▼ "star2", ▼ "y", randomNumber(20, 300));  
  setProperty(▼ "star3", ▼ "x", randomNumber(20, 500));  
  setProperty(▼ "star3", ▼ "y", randomNumber(20, 420));  
  setProperty(▼ "star4", ▼ "x", randomNumber(20, 600));  
  setProperty(▼ "star4", ▼ "y", randomNumber(20, 440));  
  setProperty(▼ "star5", ▼ "x", randomNumber(20, 300));  
  setProperty(▼ "star5", ▼ "y", randomNumber(20, 450));  
});
```

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Level 8

```
onBoardEvent(▼ accelerometer, ▼ "data", function() {
  var pitch = accelerometer.getOrientation(▼ "pitch");
  var roll = accelerometer.getOrientation(▼ "roll");
  setPosition(▼ "pointer", roll*3 + 160, pitch * 3 + 225);
});

soundSensor.threshold = 50;

onBoardEvent(▼ soundSensor, ▼ "change", function() {
  if (PioneerApp.isClicked("victoriaButton")) {
    setScreen(▼ "victoriaScreen");
  } else if (PioneerApp.isClicked("geraldButton")) {
    setScreen(▼ "geraldScreen");
  } else if (PioneerApp.isClicked("valerieButton")) {
    setScreen(▼ "valerieScreen");
  }
});
```

Activate Windows

Level 9(a)

```
onBoardEvent(▼ accelerometer, ▼ "data", function() {
  var pitch = accelerometer.getOrientation(▼ "pitch");
  if (buttonL.isPressed) {
    var purpleBugY = getProperty(▼ "purpleBug", ▼ "y");
    setProperty(▼ "purpleBug", ▼ "y", purpleBugY + pitch);
  }
  if (buttonR.isPressed) {
    //Add your code here
    var purpleBugX = getProperty(▼ "purpleBug", ▼ "x");
    setProperty(▼ "purpleBug", ▼ "x", purpleBugX + pitch);
  }
});
```

```
if (buttonL.isPressed) {  
  var orangeBugY = getProperty(▼"purpleBug", ▼"y");  
  setProperty(▼"orangeBug", ▼"y", orangeBugY + pitch);  
}  
if (buttonR.isPressed) {  
  //Add your code here  
  var orangeBugX = getProperty(▼"purpleBug", ▼"y");  
  setProperty(▼"orangeBug", ▼"y", orangeBugX + pitch);  
}  
};
```