# How to write games, animations and stories using SCRATCH

## for primary schools

# Lesson Plan 6
# Mini Game

**Mathematical Skills / Concepts**
**Scratch Features**
**Curricular Links**
**Problem solving, Variables, Time**
**Variables, Sensing**
**Mathematics, Art, Language**

lero THE IRISH SOFTWARE ENGINEERING RESEARCH CENTRE

ICS SKILLS CERTIFICATION BODY OF THE IRISH COMPUTER SOCIETY



18 07 2013 Version 1.02

# Learning Objectives

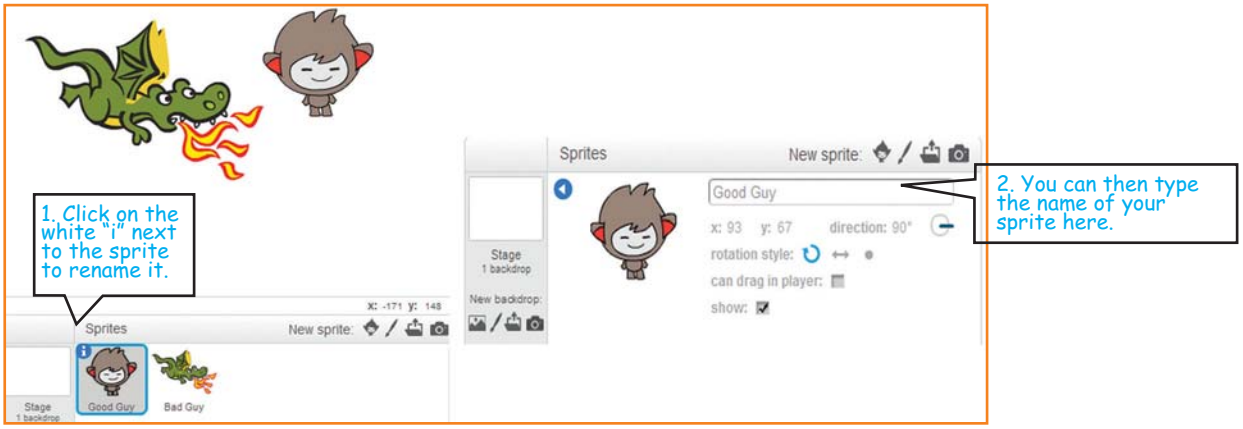
**The child will:**

- Create a game which uses variables to calculate lives and score.
- Use sensing to effect change in a game.

> **Teacher Tip**
>
> If children are downloading images or sounds from online, be aware of copyright laws. Encourage children to design their own images.

# Introduction

Create two sprites. Label one Good Guy and one Bad Guy

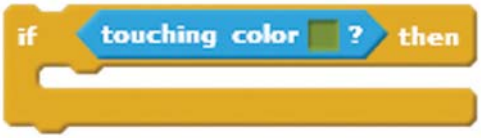



# Sensing Blocks

The touching block under Sensing gives us a true or false response. We can then create scripts which do different things if the answer is true or false.

- Write some code to make both sprites move around the screen.
- Click on the Good Guy.
- Add the following blocks to your code.
  The "if...then" block allows you to put in a condition.

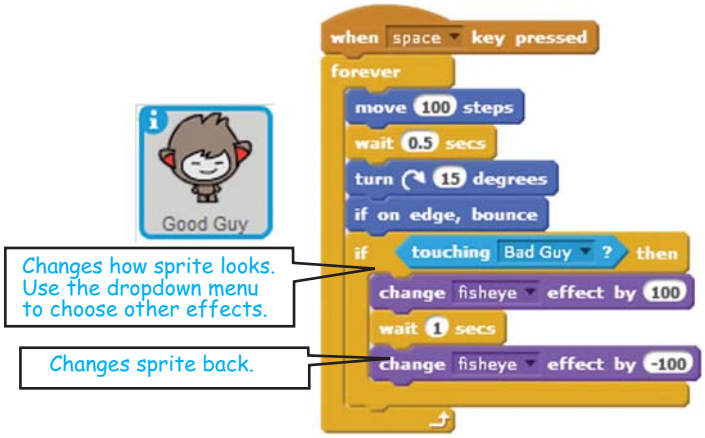

- Click on Sensing and select the touching block.
- Using the drop down arrow select Bad Guy. Alternatively you could use the "touching colour" block.


- These scripts will give us a true or false response i.e. Good Guy is touching Bad Guy (True) or it is not touching Bad Guy (False).
- Now we can decide what will happen when the sprites touch. You can insert sound or looks.

- In the example we will change how the sprite looks for 1 second and then return it to normal.

- We use a forever loop in this script. The forever loop means that Good Guy will ALWAYS react when he touches Bad Guy. The script will keep running while the program is active.



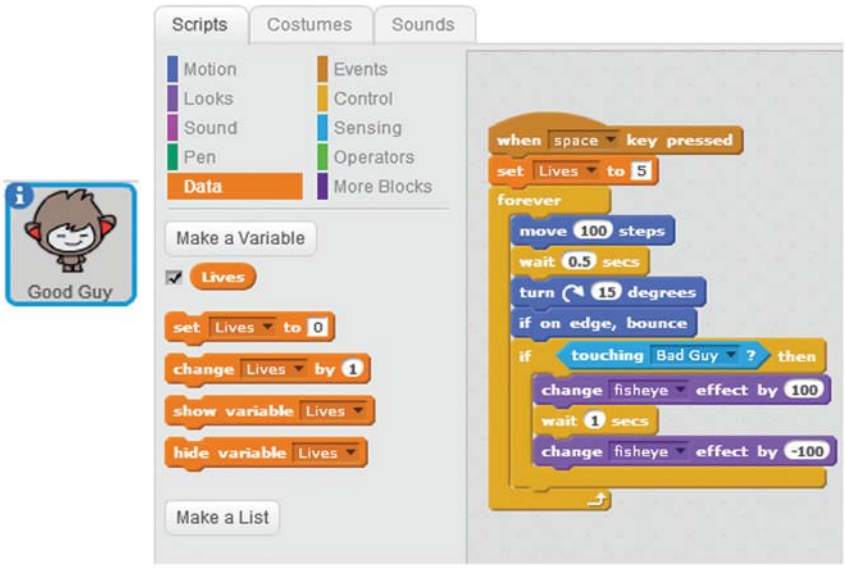

## Challenge Time 1!

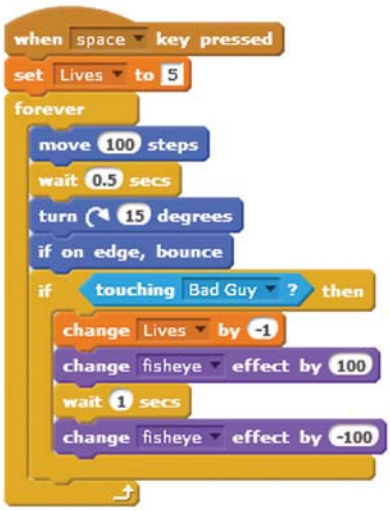
1. Choose two sprites and name them.
2. Add movement to each sprite.
3. Input the code from the image above to one sprite.
4. Alter the code to create your own effects.

## Variables

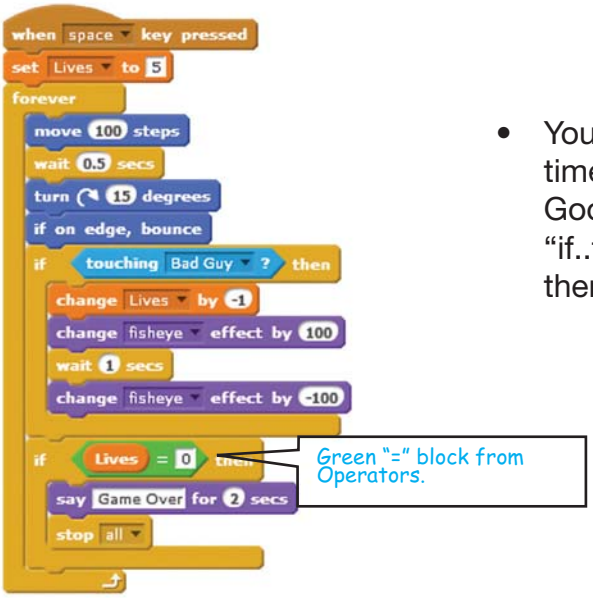
Using the game we just created we will add lives to our Good Guy. We will start with 5 lives. Each time the Bad guy touches the Good Guy the Good Guy will lose a life.

- Click on the Good Guy sprite.
- Click on Data.
- Click Make a Variable.
- The “Lives” variable will appear on the stage once the box next to it is ticked.
- You will now see additional options in the Data blocks area.
- Drag out “set lives to” and type 5 into the box.
- Add this to the start of your script.






- Within the “if...then” statement we will change the lives by minus one each time the Good Guy touches the Bad Guy.




- You will note that the lives will decrease by one each time. However, we need the game to end when the Good Guy has 0 lives left. This will require another “if..then” statement, immediately after our first “if... then” statement.

## Challenge Time 2!

1. Choose a sprite and name him Good Guy. If you wish to use your own names do!
2. Use the up, down, left and right arrows to move the sprite (recall Lesson 1).
3. Select another sprite and name him Bad Guy. Allow him to move randomly around the screen when the green flag is pressed (as for the Good Guy sprite in the example above).
4. Give the first sprite 5 lives at the start of the game.
5. Every time Bad Guy touches Good Guy, Good Guy should lose a life.
6. Allow your classmates to play your game. See who can keep their lives the longest!

## Ultimate Challenge!

1. Plan a game on paper. It could be a chasing game as above, a maze or a football game or your own idea.
2. Create the game, using movement, sound, sensing and lives.
3. In the project page area (When you are logged in click on See Project Page at the top right hand corner of the project editor) write the instructions and notes for your game.
4. Have a look at other people’s games. Tell them what you like and suggest ideas to make their game even better!