



# 5. Power Up

## Activity Structure – 45min

Activity	Timing
Warm up Game	5 mins
Introduce Story and Project	10 mins
Main Activity	25 mins
Final test & debug	throughout
Share with group	5 mins

### Overview

Let's create a simple animation where a superhero travels around the screen collecting stars. Each time they collect a star they 'power-up' and grow bigger.

### Learning Objectives:

- To use the 'shrink' and 'grow' blocks.
- To use 'start on bump'.

## National Curriculum / EYFS Curriculum Links

### Mathematics Shape, space and measures:

Children use everyday language to talk about size, position, and time to compare quantities and objects and to solve problems.

## Warm up game: What do I do?

- Select all the flashcards for the blocks you will use today.
- Stick them up around the room or lay them out on the floor/table.
- Describe what one of the blocks does and ask the children to touch/point to it, e.g. *I am blue and I move my character forward*, or *I am green and I play a sound*.
- Be positive and offer lots of targeted praise but do correct any misconceptions.
- The children could take on the role of 'teacher' once they are used to the game.

## Introduction (discuss the project together, share ideas and create excitement)

- *Does anyone know what a superhero is? Do you know any superheroes? What kind of things might they do that make them super?* Examples might be made-up (PJ Masks, Paw Patrol, Octonauts, Bitz and Bob, Batman, Batgirl) or real life (fire fighters, doctors, paramedics, explorers).
- *My superhero needs our help to get ready to save the world. Can you help her to collect the power stars?*
- Play the game with the children.
- *Which start blocks do you think I have used?* (Have all the start blocks laid out). Explain that this project uses Start on Tap and Start on Bump. Explain/recap how these blocks work.
- *What happens to a star when the superhero bumps into it? How did I make the star disappear? Which block did I use? Can you show me the hide block on your tablet?*
- *What happens to the superhero when she bumps into a star? How did I make her grow bigger? Which code blocks might I have used? Can you show me where they are on your tablet?*
- *Did you notice what I did to make the superhero move? I tapped on her. What code might I have used to make this happen? Which blocks might I have used? Do you think I used Start on Tap or Start on Bump?*

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## Main Activity Key questions and teaching

1. Choose a space background from the Scratchjr library.
2. Select and edit a 'person' character from the library to make them resemble a superhero. Children could add a cape, mask or an 'S' to the T-Shirt.
3. To add a cape, use the arrow/drag tool to move the person to one side. Draw the cape either freehand or with the triangle tool. Then using the arrow/drag tool to position the person in front of the cape.
4. Select and edit four stars from the library so that they are different colours.
5. Use the 'grow' block to make each star bigger.
6. Position the stars so that they are dotted around the screen.
7. Let's code the stars. *What do I want them to do when the superhero 'bumps' them? Which start/trigger block should I use? Will you include a sound recording?*
8. Let's code the superhero. We want our superhero to grow each time she bumps into a star. *Which start/trigger block should I use for this line of code? Which block will make my superhero get bigger? What value should I use for the 'grow' block?* Let the children experiment with using different values.
9. Now let's code the Superhero's movement. *Where do they need to move to in order to collect each of the stars?* The children will probably need some time and support to sequence the superhero's movements so that they collect each of the stars. They'll also need to account for the fact that the superhero get's bigger each time they collect a star.
10. Remind the children that they can use the 'Go Home' icon to reset the superhero's position and size.
11. Let's test out our project. *Can the superhero collect all the stars?*
12. *Is your superhero a good size at the start of the game? What about at the end?*
13. Do you want to include some instructions for how to play your game? *Which start/trigger block will you use for the instructions?*

## Teaching points

- Select and position the characters on the screen before you begin coding.
- Testing and debugging as you go along is important to this game. Model doing this and praise the children for doing it themselves.
- For progression, children could code the first star with support, then attempt to code the remaining stars with greater independence.

## Possible Extensions

- Children could create a simple two-character remote. Messaging blocks can be used to control the superhero's movements.
- Children could create a celebration for when all the stars have been collected, e.g. if you tap on the superhero the game could go to a second page which features a further animation of the superhero flying around.

## To Simplify

- Choose a person character to be the superhero and make no adaptations.
- Have just two or three stars for the superhero to collect.

## Finishing up

- Swap your game with a friend and have a play. What did you like about it?
- If the children are familiar with each other and you feel they are mature enough you could encourage them to say one thing they liked about their friend's project, and one thing they would improve. The tutor would need to manage this carefully to ensure no child unintentionally upset another child.