

Computing

Lesson 6: Improving and Refining

Variables in Games

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Task 1 - Reviewing games

Go to oaknat.uk/comp-scratch

Search for 'fruit catcher'

Try out some other versions of the game and look out for ideas that could be used to improve your game. Note them down.



Task 2 - Adding a timer

Open your game from last lesson.

Add a variable called - time

Use the algorithm below to guide your coding for a timer.

When the game starts, set a timer for 60 seconds. The timer will repeatedly count down in one-second intervals until the time equals 0.

Test your program again to ensure everything works as you intended.

If you didn't save your game you can work with the template - oaknat.uk/comp-p6a5-2



Task 3 - Time's up. Stop the game.

Follow the algorithm on the next page and modify your code to make the timer stop the game.

Remember to test your program to ensure everything works as you intended.



Task 3 - Time's up. Stop the game.

Timer

When the game starts, the player is given a 60 second timer. The timer will repeatedly count down in one-second intervals until the time equals 0.

Game Play

The falling sprite moves down from a random x position at the top of the screen.

If the sprite falls onto the Bowl, change the score. It falls again from a random x position at the top of the screen.

If the falling sprite touches the Screen Bottom, it falls again from a random x position at the top of the screen.

This continues until the timer equals 0.

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Beach ball repeatedly moves down 4 steps. If caught in bowl add 1 point.

Star repeatedly moves down 8 steps. If caught in bowl add 5 points.

Ghost repeatedly moves down 8 steps. If caught in bowl take off 5 points.



Task 4 - Lives algorithm

Write or draw an algorithm for lives in your game.

- Each time you miss an object, you lose a life.
- Write the **algorithm**:
 - What name will you give to the variable?
 - How will you set it?
 - When and how will it change? (Is it changed by all sprites or just some?)

You may wish to use the algorithm on the next page as a starting point.



Task 4 - Lives algorithm

Timer

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Game Play

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If the sprite falls onto the Bowl, change the score. It falls again from a random x position at the top of the screen.

If the falling sprite touches the Screen Bottom, it falls again from a random x position at the top of the screen.

This continues until the timer equals 0.

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Beach ball repeatedly moves down 4 steps. If caught in bowl add 1 point.

Star repeatedly moves down 8 steps. If caught in bowl add 5 points.

Ghost repeatedly moves down 8 steps. If caught in bowl take off 5 points.



Task 5 - Adding lives to your game

Implement your algorithm as code in your project.

Remember to test it!

You might choose to use the algorithm on the next page to help you.



Task 5 - Lives algorithm

Lives

When the game starts, **the player is given 5 lives.**

Game Play

The falling sprite moves down from a random x position at the top of the screen.

If the sprite falls onto the Bowl, change the score. It falls again from a random x position at the top of the screen.

If the falling sprite touches the Screen Bottom, **check if it's a star or ball. If it is, take one life away** and then it falls again from a random x position at the top of the screen.

This continues until the lives equal 0.

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Beach ball repeatedly moves down 4 steps. If caught in bowl add 1 point.

Star repeatedly moves down 8 steps. If caught in bowl add 5 points.

Ghost repeatedly moves down 8 steps. If caught in bowl take off 5 points.



Task 6 - Refine your game

Test your game

Add any further refinements

Test and debug

