



Money catch

Scratch lesson plan – Code Playground



 **BARCLAYS**

Lesson overview

In this lesson, students will create a Scratch game called money catch. Players will control a dinosaur sprite to catch falling coins, earning or losing money for each successful catch. Students will learn how to use loops, conditional logic, and variables to program interactive gameplay. Teachers will guide students through the project using the workbook.

Time	Key learning outcomes	Resources
40 mins	<ul style="list-style-type: none">Program sprite movement and interactions in ScratchUse conditional logic to detect collisions and trigger eventsCreate and manage variables to track scoresExperiment with loops to repeat actions efficiently.	<ul style="list-style-type: none">Laptops or desktop computersAccess to Scratch website - https://scratch.mit.edu

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Introduction

This game is all about catching and saving money. Start with a discussion about how the class saves money. Maybe they put it in a jar or keep it under the bed, perhaps they have a bank account to save it in.

"In many games, you need to catch something falling, like catching power ups or falling fruit. Today, we'll make a game where you try to catch falling money"

The activity in this project is to create a game where you direct a dinosaur sprite to catch falling coins which will randomly appear at the top of the screen and begin to fall downwards. As the game progresses new coin types will appear.

In this project you'll learn how to make a sprite appear at a random point, how to move a sprite to catch it, and how to keep score. You also learn about creating a bank to save your progress.

How to tie these concepts to a real-world example: "Think about have you saved up for something you want to buy, you must collect money and put it somewhere safe. Sometimes something comes along, and you spend money on other things"

Scratch practical

Ask the children to log into Scratch and set up their workspace as described in the workbook. Show the money catch video as a guided lesson pausing regularly when the pupils need to catch up.

- Children should be able to follow along with the workbook or the guided lesson video
- By the end of the lesson children should be able to create a working program showcasing the money catch game.

Activity – money catch

This project uses a number of features to create a fun coin catching game.

- **Coding the character:** Demonstrate how to program the character's movement using arrow keys or touch inputs
- **Coding the coins:** Programme the coins with random appearances
- **Code the treasure chest:** Code the chest to save the money that has been caught.

Explain how to use sensing blocks to detect when a coin is caught and implement a response (e.g. target disappears, score increases).

Scratch practical

Using the video and workbooks support the children to follow the instructions and complete the coding project. Have them think of other ways to enhance the project if they have extra time. You'll learn how to use loops to make the coins fall, variables to track your score, and conditional logic to detect catches."

Activity wrap up

Prepare to share your project with the class:

- "What happens if you change the number in the movement block? How does it affect the dinosaur's speed?"
- "Why do we use a condition to check if the dinosaur and coin collide?"

Encourage customisation

- Add more coin types to increase the difficulty
- Create your own saving goal and personalise your game
- Add a timer to track how long it takes to reach 20 points.

Code snippets

Code Playground dino

```

when I receive Start
  set size to 50 %
  switch costume to Code Playground Dino left
  go to x 22 y -106
  set rotation style don't rotate
  forever
    if key right arrow pressed? then
      switch costume to Code Playground Dino right
      change x by 10
      if on edge, bounce
    if key left arrow pressed? then
      switch costume to Code Playground Dino left
      change x by -10
      if on edge, bounce
  
```

Stage

```

when clicked
  switch backdrop to Forest
  show variable Money saved £
  show variable Money caught £
  set Money saved £ to 0
  set Money caught £ to 0
  broadcast Start
  forever
    if Money saved £ > 19 then
      broadcast Game over
      switch backdrop to You win
      stop all
  
```

Coin

```

when I receive Start
  show
  go to x pick random -223 to 156 y 165
  forever
    change y by -5
    if touching Code Playground Dino ? then
      wait 0.2 seconds
      hide
      change Money caught £ by 1
      go to x pick random -223 to 156 y 165
      show
    if touching edge ? then
      say You lost any money caught for 0.8 seconds
      wait 0.2 seconds
      hide
      set Money caught £ to 0
      go to x pick random -223 to 156 y 165
      show
  
```

Red coin

```

when I receive Start
  hide
  wait until Money saved £ > 1
  show
  go to x pick random -223 to 156 y 165
  forever
    change y by -5
    if touching Code Playground Dino ? then
      say You lost £1 from money saved for 0.8 seconds
      wait 0.2 seconds
      hide
      change Money saved £ by -1
      go to x pick random -223 to 156 y 165
      show
    if touching edge ? then
      wait 0.2 seconds
      hide
      go to x pick random -223 to 156 y 165
      show
  
```

Chest

```

when I receive Start
  go to x 200 y -110
  forever
    if touching Code Playground Dino ? then
      if Money caught £ > 0 then
        say Saved for 0.5 seconds
        change Money saved £ by Money caught £
        set Money caught £ to 0
  
```

Summary

The following information is an example of what a child at an expected level would be able to demonstrate when completing these activities with additional examples to demonstrate how this would vary for a child with emerging or exceeding achievements.

Assessment guidance

Differentiation – Lower ability/ASN

- Focus on programming the dinosaur to move and catch one coin
- Provide pre-made starter code for the coin's movement
- Pair students for additional support.

Differentiation – Higher ability/extension

- Challenge students to add multiple coin types or obstacles
- Encourage them to use variables to track money saved or add a timer
- Ask them to program additional features, like bonus items worth extra points.

Plenary

- What blocks did you use to make the coins fall and reset?
- How did you program the dinosaur to interact with the coins?
- What would you add to make your game more challenging?

Assessment questions

1. How did you program the dinosaur to catch the coins?
2. What blocks did you use to make the coins fall?
3. How does the score variable work, and why is it important?
4. What feature would you add to improve the game?