

Helicopter Game

PRIMM Algorithm Page 1

Don't load Scratch
Work with a partner



Continuous

Loops Focus

A	B	C	D
Green flag start Loop always Helicopter costume 2 Pause tenth of second Helicopter costume 3 Pause tenth of second Helicopter costume 4 Pause tenth of second	Green flag start Go X -159 Y -131 3 secs move to X -74 Y113 Loop always Point to mouse cursor Move one step	Green flag start Stop drawing pen up Clear all lines Pause 3 seconds Start drawing pen down Pen size 3 Loop always Pen colour light grey Pause 1 second Pen colour dark grey Pause 1 second	Green flag start Pause three seconds Say mayday for two seconds Say Helicopter in trouble for two seconds Say avoid the birds for two seconds

Reading algorithms

- 1, How many different costumes will algorithm A show once the green flag has been clicked?
- 2, What instructions are inside the continuous loop in algorithm block B?
- 3, How many continuous loops are in algorithms A, B C & D above?
- 4, How many seconds will algorithm D run for once the green flag is started?
- 5, How long does it stay light grey for before changing to dark grey in algorithm C?

Match the algorithms to the correct prediction. The first one has been done for you.

Read the algorithms A to D slowly from top to bottom. Beware there are two false predictions which don't match any code above!

D					
Say what has happened to the helicopter and what the user should do in the game.	Leave a light and dark grey trail behind the helicopter after 3 seconds.	Stop the game if the helicopter touches a parrot.	Move the helicopter to a start location. Then make it move by following the mouse.	Make the parrot flap its wings by changing costumes.	Change the costumes of the helicopter to make it look like it is flying.

Name

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Start Scratch and load
helicopter



Continuous Loops Focus

Run the code

Play the helicopter game a few times.

Did you predict the outcome?

Mark your reading code and prediction matches on page 1 using the answer 

Investigate (Run the programs lots of times but don't change the code)

Look at the code inside the helicopter

Helicopter Sprite Questions

- 1, What x and y position does the helicopter start at?
- 2, What x and y position does the helicopter glide to 3 seconds after the game has started?
- 3, How long does it take before the light and dark grey trail starts to show in the game?
- 4, Which helicopter costume is not used? Why is it not used? (HINT Look in costumes)

Look at the code inside Parrot 1

Parrot 1 Sprite Questions

- 1, How long is parrot 1 hidden for once the game starts?
- 2, Which two backdrops are only run once the parrot touches a helicopter?
- 3, How long is there between each beat of the parrots wings?
- 4, What does the parrot do once it touches the edge of the screen? What code block instructs it to do that?

Now mark your work using the answer 

Name



Continuous Loops Focus

Modify (Run the code and make small changes)

Helicopter Sprite Questions

- 1, Can you make the rotor on the helicopter run slower? What did you change?
- 2, Can you make the helicopter move faster? What did you change?
- 3, Can you make the smoke trail change colour quicker? What did you change?
- 4, Can you make the smoke trail wider? What did you change?
- 5, Can you make the smoke trail start earlier? What did you change?

Parrot 1 Sprite Questions

- 1, Can you make the parrot move faster? What did you change?
- 2, Can you make the wings flap faster? What did you change?
- 4, Which three blocks are initialisation? Return the sprite and background back to their starting positions?

Modify More (Make larger changes such as adding blocks)

Any Sprite Questions

- 1, Modify the code in helicopter so that it goes to the mouse-pointer rather than just moving slowly towards it. (HINT You will need to replace a block)
- 2, Add another faster parrot that arrives after 35 seconds from the bottom right. You can duplicate Parrot 4 as a starting point.

Now mark this page using the answer  sheep

Name

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You can share design ideas but must
plan and code separately



Continuous

Loops Focus

Make

Design and code your own game that uses loops. You can adapt any ideas from the helicopter game.

Idea Level *My game will...*

Design Level (Draw your game simply, What characters will you use?, What will they do?)

Write loop algorithms that you might need (you can write one then code it)

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Initialisation Jot down how your game will always start in the same place

Name

Helicopter Game

PRIMM Algorithm Answer Page

Reading Algorithms

1, How many different costumes will algorithm A show once the green flag has been clicked?

Three helicopter2, helicopter3, helicopter4 (1 mark)

2, What instructions are inside the continuous loop in algorithm block B?

Point to mouse cursor Move one step (1 mark for both)

3, How many continuous loops are in algorithms A, B C & D above?

3 (1 mark)

4, How many seconds will algorithm D run for once the green flag is started?

9 (1 mark)

5, How long does it stay light grey for before changing to dark grey in algorithm C?

1 second (1 mark)

Match the algorithm to the correct prediction. (1 mark for each correct prediction 4 marks in total)

D	C		B		A
Say what has happened to the helicopter and what the user should do in the game.	Leave a light and dark grey trail behind the helicopter after 3 seconds.	Stop the game if the helicopter touches a parrot.	Move the helicopter to a start location. Then make it move by following the mouse.	Make the parrot flap its wings by changing costumes.	Change the costumes of the helicopter to make it look like it is flying.

Investigate Answers

Look at the code inside the helicopter

Helicopter Sprite Questions

1, What x and y position does the helicopter start at?

X -159 y -131 (1 mark)

2, What x and y position does the helicopter glide to 3 seconds after the game has started?

X -74 y 113 (1 mark)

3, How long does it take before the light and dark grey trail starts to show in the game?

3 seconds (1 mark)

4, Which helicopter costume is not used? Why is it not used?

Helicopter, it has no rotors (1 mark)

Look at the code inside Parrott 1

Parrot 1 Sprite Questions

1, How long is parrot 1 hidden for once the game starts?

5 seconds (1 mark)

2, Which two backdrops are only run once the parrot touches a helicopter?

Boom and xy-grid (1 mark if both are mentioned)

3, How long is there between each beat of the parrots wings?

0.5 seconds or half a second (1 mark)

4, What does the parrot do once it touches the edge of the screen? What code block instructs it to do that?

Bounces of the edge of the screen, if on edge, bounce (1 mark)

Helicopter Game

PRIMM Algorithm Answer Page

Modify (Run the code and make small changes)

Helicopter Sprite Questions

1, Can you make the rotor on the helicopter run slower? What did you change?

Increase the wait time of all three blocks above 0.1 seconds. (1 mark)

2, Can you make the helicopter move faster? What did you change?

Increase move to more than 1 step (1 mark)

3, Can you make the smoke trail change colour quicker? What did you change?

Reduce wait 1 second to less than 1 second (1 mark)

4, Can you make the smoke trail wider? What did you change?

Set pen size to greater than 3 (1 mark)

5, Can you make the smoke trail start earlier? What did you change?

Reduce wait 3 seconds to less than 3 or remove the block. (1 mark)

Parrot 1 Sprite Questions

1, Can you make the parrot move faster? What did you change?

Change 0.7 steps to a higher number (1 mark)

2, Can you make the wings flap faster? What did you change?

Change wait 0.5 to a smaller decimal fraction (1 mark)

4, Which three blocks are initialisation? Return the sprite and background back to their starting positions?

go to x and y, point in direction, Switch backdrop to clear (1 mark for two or more of these)

Modify More (Make larger changes such as adding blocks)

Any Sprite Questions

1, Modify the code in helicopter so that it goes to the mouse-pointer rather than just moving slowly towards it.

Add go to mouse pointer inside the forever loop (1 mark)

2, Add another faster parrot that arrives after 35 seconds from the bottom right. You can duplicate Parrot 4 as a starting point.

Duplicate the parrot (1 mark)

Change hide, wait 35, show (1 mark)

Change go to x and y to start from bottom right (1 mark)