



Variables in Games

```

when green flag clicked
  go to front layer
  go to x: -199 y: -150
  point in direction 90
  set speed to 0
  wait 8 seconds
  set speed to 1
  set turn_degrees to 5
  forever loop
    move speed steps
    if key right arrow pressed? then
      turn turn_degrees degrees
    if key left arrow pressed? then
      turn turn_degrees degrees
  
```

```

when green flag clicked
  say I am Walker for 2 seconds
  say Arrows to steer for 2 seconds
  say Pop the glowing globes to score for 2 seconds
  say Avoid the slippery oil for 2 seconds
  
```

```

when green flag clicked
  wait 8 seconds
  forever loop
    if touching color blue? then
      set speed to -1
      wait 0.5 seconds
    if touching color blue? then
      go to x: -199 y: -150
      point in direction 90
      set score to 0
      set speed to 1
      say bye bye points! for 2 seconds
    if not touching color blue? then
      set speed to 1
  
```

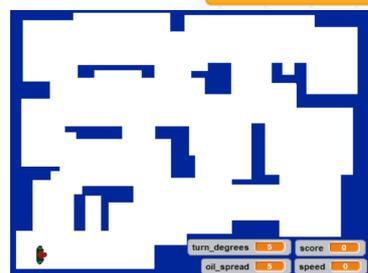
```

when green flag clicked
  wait 8 seconds
  forever loop
    if touching color black? then
      set speed to 2
      wait 0.5 seconds
      set speed to 1
  
```

Match the letter to the code description

	Check to see if the walker sprite is touching the blue wall and send it backwards for half a second if it is
	Move and steer using the arrow keys
	Initialise the walker sprite so that it runs the same way every time the green flag is clicked
	Assign 1 to the speed variable so walker can move forwards
	Check to see if the walker sprite is still touching the blue wall and send it back to the start if it is
D	Tell the user how to play the game
	Check to see if the sprite is touching the black oil slick and increase speed to 2 for half a second if it is.
	Check to see if the walker sprite has stopped touching the blue wall and make it go forwards if it has

Use the marking sheet to check your answers



Name



Variables in Games

RUN & INVESTIGATE the code (Run the programs lots of times but don't change the code)

Look at the code inside Walker

Walker Sprite Questions



Walker

Revision Questions

1, What condition has to be met for the speed to rise to 2 steps for 0.5 seconds? Circle the right one *Right arrow pressed? Left arrow pressed? Touch black colour? Touch blue colour? Not touching blue colour?*

2, Circle all the initialisation code, designed to set the program back to the start. *go to x:-199 y:-150, forever loop, set speed to -1, say bye bye points, set speed to 0*

3, Which indefinite loop (forever loop) is NOT checking that a condition is met? Name the first block inside the forever loop.

Variable Questions (orange blocks)

4, What variable command block makes Walker go backwards?

5, What variable command block makes walker go twice as fast?

6, What variable command block changes how fast walker turns?

7, What variable command block wipes out all previous score?

8, List all the ways the speed can be changed using a variable in Walker?

Oil Sprite Variable Questions

9, What block assigns a value to the oil_spread variable?



Oil

10, If 4 is assigned to oil_spread at the start of the game how long will the game pause for before showing the next oil costume?

10, Explain in your own words how the oil_spread variable is used in the Oil sprite?

Now mark your use work using the USE answer sheet

Name

Walker One

PRIMM **MODIFY** Page 3

Continue to use Scratch with
Walker_one



Variables in Games

MODIFY the code (Make small changes to the code)

Look at the code inside **Globes**

Globes Sprite Questions

1, Change the code so that the user receives three points every time a Globe is burst.
Write down what you changed?

2, Change the code so that the user always starts with 100 points.
Write down what you changed?

Oil Sprite Questions

Look at the code inside **Oil**

3, Change the code so that the oil_spread variable is always assigned 5
Write down what you changed?

Walker Sprite Questions

Look at the code inside **Walker**

4, Change the code using a variable so Walker turns faster.
Write down what you changed?

5, Make walker walk backwards faster when it touches the blue maze wall.
Write down what you changed?

6, What block would you remove so that the user don't lose their score if they stay touching the blue walls for too long?

MODIFY MORE

Walker Sprite Questions

7, Change the code so that the Oil makes Walker slower to turn. What did you add?

8, How can you ensure that Walkers steering goes back to normal once it is not touching the black oil spill? Write down what you changed?

Now mark your use work using the **MODIFY** answer sheet

Name





Wo

Variables in Games

CREATE

Note that Baddie uses new variables but that other than that it is just a copy of walker

Create an Evil Character (everyone must do this)

Change the code so that Baddie

- Steers using a and d
- Starts at the top right not bottom left
- Has their own dialogue when the game starts
- Can go through the walls and oil at a slower speed
- Loses points by popping globes
- Gains lots of points by catching Walker
- Has a faster turn
- Sends Walker and Baddie back to their own start positions when Walker is caught



Now choose what other optional challenges you wish to create

Create moving walls

Create a section of moving wall as a new sprite
Animate the sprite to move back and forward slowly

Create other levels

Use the same colour walls
Can you make these change automatically after a set period of time?

Create new obstacles

Create new things that affect Walker and Baddie differently

Add your own creative addition

Name



Variables in Games

```

when clicked
  go to front layer
  go to x: -199 y: -150
  point in direction 90
  set speed to 0
  wait 8 seconds
  set speed to 1
  set turn_degrees to 5
  forever
    move speed steps
    if key right arrow pressed? then
      turn turn_degrees degrees
    if key left arrow pressed? then
      turn turn_degrees degrees
  
```

```

when clicked
  say I am Walker for 2 seconds
  say Arrows to steer for 2 seconds
  say Pop the glowing globes to score for 2 seconds
  say Avoid the slippery oil for 2 seconds
  
```

```

when clicked
  wait 8 seconds
  forever
    if touching color blue ? then
      set speed to -1
      wait 0.5 seconds
    if touching color blue ? then
      go to x: -199 y: -150
      point in direction 90
      set score to 0
      set speed to 1
      say bye bye points! for 2 seconds
    if not touching color blue ? then
      set speed to 1
  
```

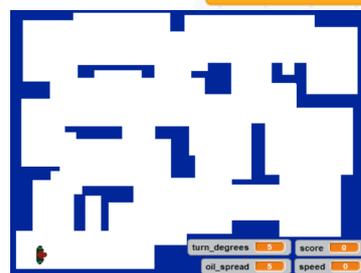
```

when clicked
  wait 8 seconds
  forever
    if touching color black ? then
      set speed to 2
      wait 0.5 seconds
      set speed to 1
  
```

Match the letter to the code description

E	Check to see if the walker sprite is touching the blue wall and send it backwards for half a second if it is
C	Move and steer using the arrow keys
A	Initialise the walker sprite so that it runs the same way every time the green flag is clicked
B	Assign 1 to the speed variable so walker can move forwards
F	Check to see if the walker sprite is still touching the blue wall and send it back to the start if it is
D	Tell the user how to play the game
H	Check to see if the sprite is touching the black oil slick and increase speed to 2 for half a second if it is.
G	Check to see if the walker sprite has stopped touching the blue wall and make it go forwards if it has

Use the marking sheet to check your answers



Name

USE the code

Walker Sprite Questions

Revision Questions

1, What condition has to be met for the speed to rise to 2 steps for 0.5 seconds? Circle the right one *Right arrow pressed? Left arrow pressed? Touch black colour? Touch blue colour? Not touching blue colour?* (1 mark)

2, Circle all the initialisation code, designed to set the program back to the start.

go to x:-199 y:-150, forever loop, set speed to -1, say bye bye points, set speed to 0 (2 marks)

3, Which indefinite loop (forever loop) is NOT checking that a condition is met?
Name the first block inside the forever loop. *Switch costume to walker_R* (1 mark)

Variable Questions

4, What variable command block makes Walker go backwards?

Set speed to -1 (1 mark)

5, What variable command block makes walker go twice as fast?

Set speed to 2 (1 mark)

6, What variable command block changes how fast walker turns?

Set turn_degrees to 5 (1 mark)

7, What variable command block wipes out all previous score?

Set score to 0 (1 mark)

8, List all the ways the speed can be changes using a variable in Walker?

Set speed to 0, set speed to 1. set speed to 2 (3 marks)

Or backwards -1, forward slow 1, forward fast 2 (3 marks)

Oil Sprite Variable Questions

9, What block assigns a value to the oil_spread variable?

Pick random 3-6 (1 mark)

10, If 4 is assigned to oil_spread at the start of the game how long will the game pause for before showing the next oil costume?

4 seconds (1 mark)

10, Explain in your own words how the oil_spread variable is used in the Oil sprite?

Controls how quickly oil sprites appear (1 mark)

Controls how quickly oil spills get bigger (1 mark)

MODIFY the code

Globes Sprite Questions

1, Change the code so that the user receives three points every time a Globe is burst.

Write down what you changed?

Change score by 3 (1 mark)

2, Change the code so that the user always starts with 100 points.

Write down what you changed?

Set score to 100 in Globes sprite (1 mark)

Oil Sprite Questions

Look at the code inside Oil

3, Change the code so that the oil_spread variable is always assigned 5

Write down what you changed?

Replace pick random 3-5 with set oil_spill to 5 OR adapt random to pick random 5 to 5 (1 mark)

Walker Sprite Questions

Look at the code inside Walker

4, Change the code using a variable so Walker turns faster.

Write down what you changed?

Set turn_degrees to any number greater than 5

5, Make walker walk backwards faster when it touches the blue maze wall.

Write down what you changed?

Set speed to any number lower than -1 so -2, -3 etc (1 mark)

6, What block would you remove so that the user don't lose their score if they stay touching the blue walls for too long?

Set score to 0 inside walker sprite

MODIFY MORE

Walker Sprite Questions

7, Change the code so that the Oil makes Walker slower to turn. What did you add?

If touching colour black

set turn_degrees to any number less than 5 but greater than 0 (1 mark)

8, How can you ensure that Walkers steering goes back to normal once it is not touching the black oil spill? Write down what you changed?

After the wait 0.5 seconds add a set turn_degrees to 5

Name