

Snowballs!



Starter:

<https://scratch.mit.edu/projects/1242631052/editor>

Don't forget to remix and rename.

Remix

1. In the Arrow sprite, add code to follow the mouse pointer.

```
when green flag clicked
  go to x: -200 y: 140
  go to back layer
  forever
    point towards mouse-pointer
```

2. In the Snowball sprite, create a new script to power up while you are pressing the space bar and stop when you release.

- Detect when space is pressed.
- Create a new variable 'power' and make sure it starts at zero.
- Use a loop to increase the power until the space is not pressed any more.

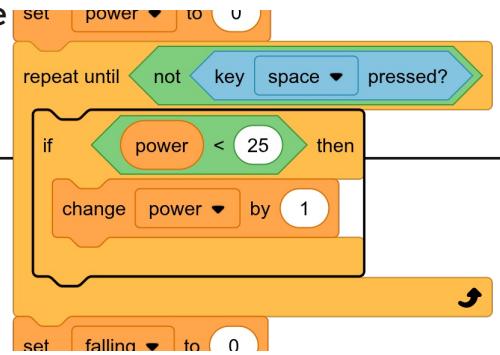
```
when space key pressed
  set power to 0
  repeat until not key space pressed?
    change power by 1
```

3. Add to the script from step 2 to fire the snowball when you release the space bar. This will fire off at a speed determined by the power variable and should fall with gravity. The further the snowball flies the more gravity will make it fall.

- Create a new variable 'falling' for how fast the snowball is falling. Make sure it starts at zero.
- Point in the direction of the arrow (towards the mouse pointer).
- Repeat the next two steps until the snowball hits the ground - that is, when the 'y' value is low enough.
- Move forward at the speed of 'power' and fall by the amount of 'falling'.
- Change 'falling' to make the snowball fall more.
- After the snowball has hit the ground, put it back to the start for the next throw.

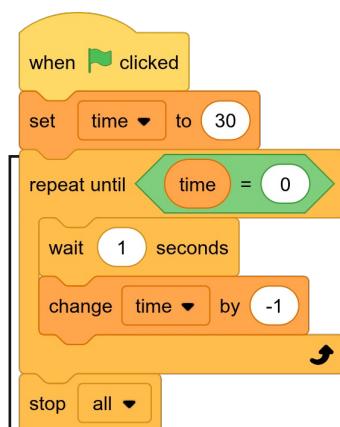
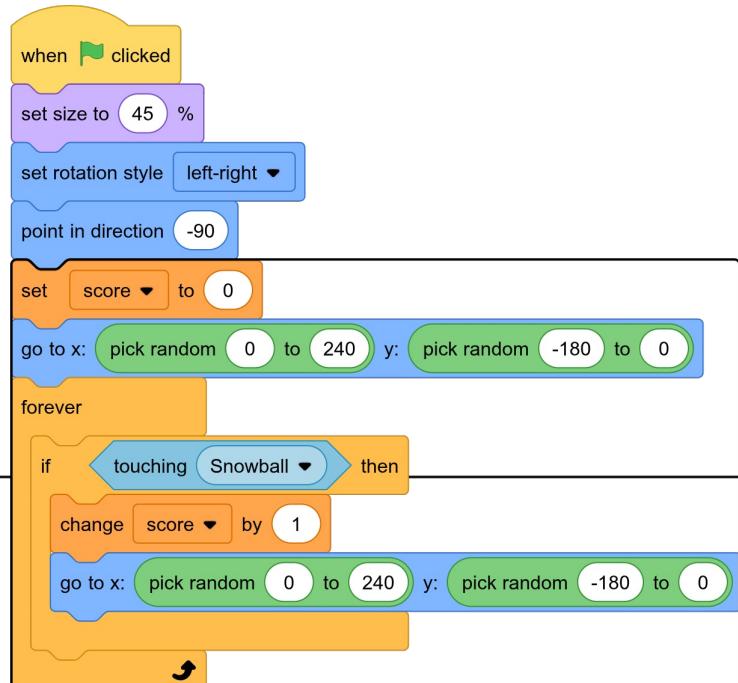
```
change power by 1
set falling to 0
point towards mouse-pointer
repeat until y position < -170
  move power steps
  change y by falling
  change falling by -1
go to x: -200 y: -140
```

4. You might have noticed that you can make the power so strong that the snowball fires off in a straight line. This will make the game very easy so lets set a maximum power.



5. In the Snowman sprite, add to the script to get the snowman moving around so that you can shoot the snowball at it.

- Create a new variable for the 'score'. Set this to zero at the start of the game.
- Repeat forever.
- If the snowman is hit by the snowball add to the score and jump to a new random place.



6. Still in the Snowman sprite, lets add a new script to set a time limit to hit as many snowmen as possible.

- Create a new variable for the 'time'.
- When the green flag is clicked set 'time' to 30 seconds.
- Have a loop to take one off 'time' every second until it reaches zero.
- At the end stop everything to end the game.

7. Think of some ways you can do to make the game better. For example,

- Play a sound when you fire the snowball or hit the snowman.
- Add another sprite that you need to avoid hitting.
- Make the snowman move around, so it is harder to hit.
- Something else from your own imagination!

