

Cricket

Build your own cricket game with Scratch



Step 1 What you will make

Create a fun cricket game!



Step 2 Bowl a ball

Open the starter project (<https://scratch.mit.edu/projects/1202431572/editor/>).



The starter project contains some starter code and all the sprites you need.

Select the **Ball** sprite.



Take aim

A ball will be bowled to a random stump.

In the **when I receive New Ball** script, set a random stump to bowl at.



```
when I receive New Ball
  set size to 80 %
  go to x: 120 y: 80
  set Stump to item pick random 1 to 3 of Stumps
```

Tell the player which stump has been selected (so they know where to move their bat later).



```
when I receive New Ball
  set size to 80 %
  go to x: 120 y: 80
  set Stump to item pick random 1 to 3 of Stumps
  say Stump for 0.5 seconds
```

Bowl at the stump

Make the ball point towards the selected stump and move towards it until it reaches it.



```
when I receive New Ball
  set size to 80 %
  go to x: 120 y: 80
  set Stump to item pick random 1 to 3 of Stumps
  say Stump for 0.5 seconds
  repeat until touching Stump ?
    point towards Stump
    move 4 steps
```

Change the perspective

Make the ball look smaller as it moves towards the stump.



```
when I receive New Ball
  set size to 80 %
  go to x: 120 y: 80
  set Stump to item pick random 1 to 3 of Stumps
  say Stump for 0.5 seconds
  repeat until touching Stump ?
    point towards Stump
    move 4 steps
    set size to size - 3 %
```

Let other sprites know a ball has been bowled

Add a new **broadcast** message.



```
when I receive New Ball
  set size to 80 %
  go to x: 120 y: 80
  set Stump to item pick random 1 to 3 of Stumps
  say Stump for 0.5 seconds
  repeat until touching Stump ?
    point towards Stump
    move 4 steps
    set size to size - 3 %
  broadcast ball bowled
  wait 1 seconds
```

Over!

There are six balls in each over.

Check if it is the end of an over.



```
when I receive New Ball
  set size to 80 %
  go to x: 120 y: 80
  set Stump to item pick random 1 to 3 of Stumps
  say Stump for 0.5 seconds
  repeat until touching Stump ?
    point towards Stump
    move 4 steps
    set size to size - 3 %
  broadcast ball bowled
  wait 1 seconds
  if Balls = 0 then
```

If the over has ended, tell the player and reset the number of balls to 6.



```
when I receive New Ball
  set size to 80 %
  go to x: 120 y: 80
  set Stump to item pick random 1 to 3 of Stumps
  say Stump for 0.5 seconds
  repeat until touching Stump ?
    point towards Stump
    move 4 steps
    set size to size - 3 %
  broadcast ball bowled
  wait 1 seconds
  if Balls = 0 then
    say That's over! for 1 seconds
    set Balls to 6
```

Test: Press n, then use the b key to bowl six balls. Check that after six balls have been bowled, "That's over!" is called and the Balls variable is reset to 6.



Step 3 Move the bat

The player needs to move the bat to the stump the ball is moving towards.

Some code has been added for you already.

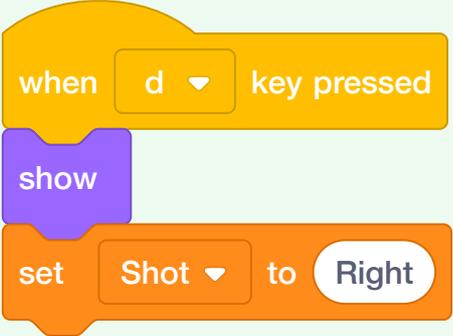
Complete the bat controls

Select the **Bat** sprite.



You need to make the bat move to the right stump when the d key is pressed.

Copy or duplicate the script for the a or s key controls and change the values so the shot is set to the **Right** stump when the d key is pressed.



After a ball is bowled

A **ball bowled** event is broadcast when the ball reaches a stump.

Add a `when I receive ball bowled` block to the **Bat** sprite.



```
when I receive ball bowled
```

Check if the **Bat** sprite is touching the ball.



```
when I receive ball bowled
if touching Ball ? then
else
```

If the bat is touching the ball, the player needs to score some runs!



```
when I receive ball bowled
if touching Ball ? then
  set Runs to pick random 1 to 6
else
```

Notice: The number of runs scored is a random number between 1 and 6.

Update the **Score** variable.



```
when I receive ball bowled
if touching Ball ? then
  set Runs to pick random 1 to 6
  change Score by Runs
else
```

Test: Press n then b, then move the bat. Check that the player can score runs.



Tell the player how many runs they scored.



Notice: There is a space before the word 'runs' to separate the number of runs from the word 'runs'.

```
when I receive ball bowled
  if touching Ball ? then
    set Runs to pick random 1 to 6
    change Score by Runs
    if Runs = 1 then
      say 1 run! for 0.5 seconds
    else
      say join Runs runs! for 0.5 seconds
    else
```

Notice: The code checks if the player scored just one run, because it would not sound right to say "1 runs!" instead of "1 run!". It uses the word 'runs' if the score is between two and six runs.

If the bat is not touching the ball when it arrives at a stump, the player needs to lose a wicket.



You will add code to the **Middle** stump sprite to handle this.

Add a new **broadcast** message to inform the **Middle** stump sprite.

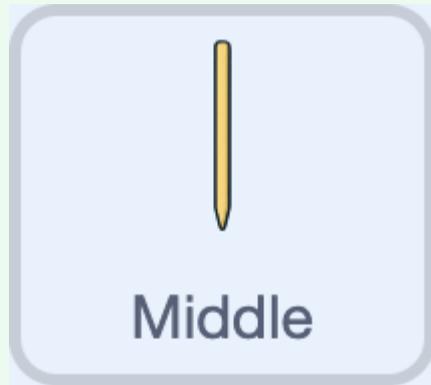
```
when I receive ball bowled
  if touching Ball ? then
    set Runs to pick random 1 to 6
    if Runs = 1 then
      say 1 run! for 0.5 seconds
    else
      say join Runs runs! for 0.5 seconds
    change Score by Runs
  else
    broadcast wicket!
```

Test: Press n then b, then move the bat to score runs. Check that the player is told the number of runs they have scored.



Step 4 Out!

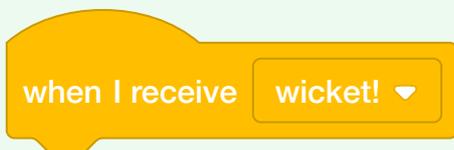
Select the **Middle** stump sprite.



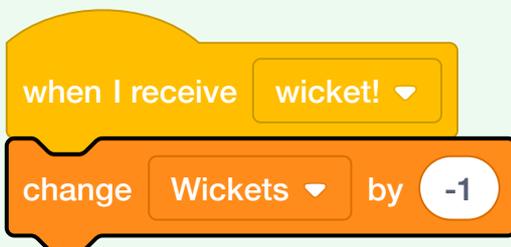
This sprite will tell the player that the current batter is out and reduce the number of wickets by 1.

If the batters have all lost their wickets, this sprite will give the player their score.

Add a **when I receive wicket!** block.



Reduce **Wickets** by 1.



Check if no wickets remain.



```
when I receive wicket!
change Wickets by -1
if Wickets = 0 then
else
```

If no wickets remain, tell the player that their 'team' is out.



```
when I receive wicket!
change Wickets by -1
if Wickets = 0 then
say ALL OUT! for 1 seconds
else
```

Use a `join` block to tell the player the score.



```
when I receive wicket!
  change Wickets by -1
  if Wickets = 0 then
    say ALL OUT! for 1 seconds
    say join You scored: Score for 2 seconds
  else
```

Combine **two** `join` blocks to tell the player the number of deliveries.



```
when I receive wicket!
  change Wickets by -1
  if Wickets = 0 then
    say ALL OUT! for 1 seconds
    say join You scored: Score for 2 seconds
    say join From join Deliveries deliveries! for 2 seconds
  else
```

If the player has wickets left, tell them that the current batter is out.



```
when I receive wicket!
  change Wickets by -1
  if Wickets = 0 then
    say ALL OUT! for 1 seconds
    say join You scored: Score for 2 seconds
    say join From join Deliveries deliveries! for 2 seconds
  else
    say OUT! for 0.5 seconds
```

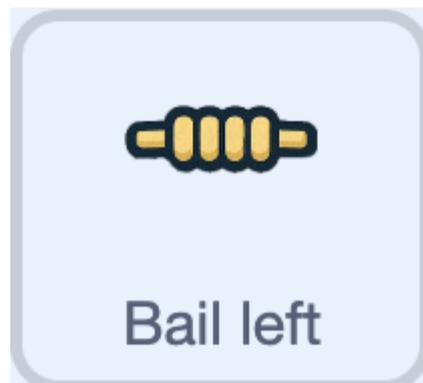
Test: Press n, then use the b key to get out **three** times. Check that the player is told each batter is "OUT!", and when all three batters have lost their wickets, check that the player is told the team is "ALL OUT!" and is given the score.



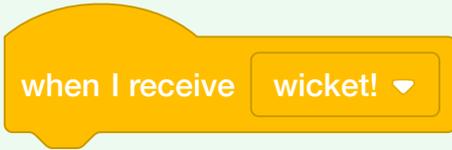
Challenge!

Knock the bails off

Start with the **Bail left** sprite.



Add a **when I receive wicket!** block.



To create a spinning bail, your code needs to repeat some motion many times.

Add a **repeat** block.



Add **Motion** blocks to turn and move the bail randomly each time the code repeats.



You need to change the size of the bail randomly too.

Add a `change size` block.



```
when I receive wicket!
repeat 10
  turn pick random 300 to 10000 degrees
  move pick random 1 to 10 steps
  change size by pick random -2 to 3
```

Experiment with different values for the `turn` and `move` blocks.



Reset the bail

Add a **wait** block, then reset the **size**, **x: y:** position, and rotation **direction** of the bail.



```
when I receive wicket!
  repeat 10
    turn pick random 300 to 10000 degrees
    move pick random 1 to 10 steps
    change size by pick random -2 to 3
  wait 1 seconds
  set size to 6 %
  go to x: -6 y: 2
  point in direction 90
```

Test: Press n then b, then get bowled. Check that the left bail flies off.



Make both bails fly

Drag the complete code from the **Bail left** sprite to the **Bail right** sprite to copy it.



Click on the **Bail right** sprite.



Check that the code that you have copied is there.

Change the reset position of the **Bail right** sprite.



```
when I receive wicket!
repeat 10
  turn pick random 300 to 10000 degrees
  move pick random 1 to 10 steps
  change size by pick random -2 to 3
wait 1 seconds
set size to 6 %
go to x: 6 y: 2
point in direction 90
```

Test: Press n then b, then get out. Check that both bails fly off.



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