

Lesson 2: If-then-else

I can use an if-then-else instruction in my program



If (it is a school day)
Then (you get up early)



Can you put 'if' into a sentence?

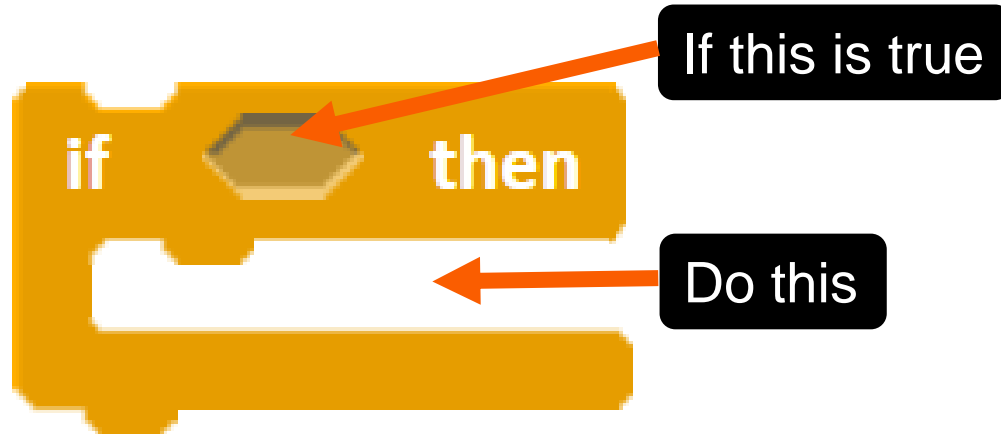


Demonstration

```
when clicked  
ask What's your name? and wait  
say Hello! until done  
say answer until done
```

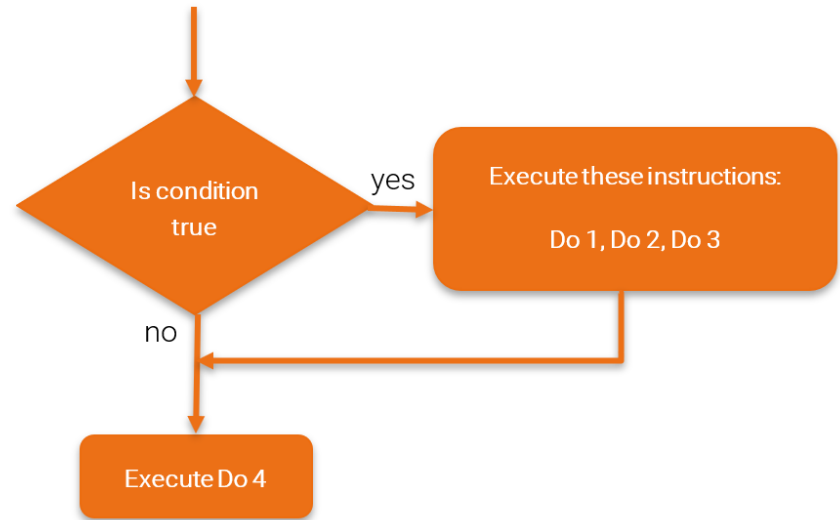


If-then



Demonstration

```
if condition is true then  
do 1  
do 2  
do 3  
do 4
```



Demonstration

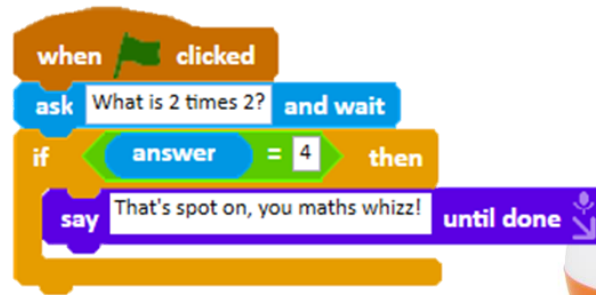
```
when clicked  
ask What is 2 times 2? and wait  
if answer = 4 then  
say That's spot on, you maths whizz! until done
```



Activity 1

PicoH can be programmed to respond to your questions.

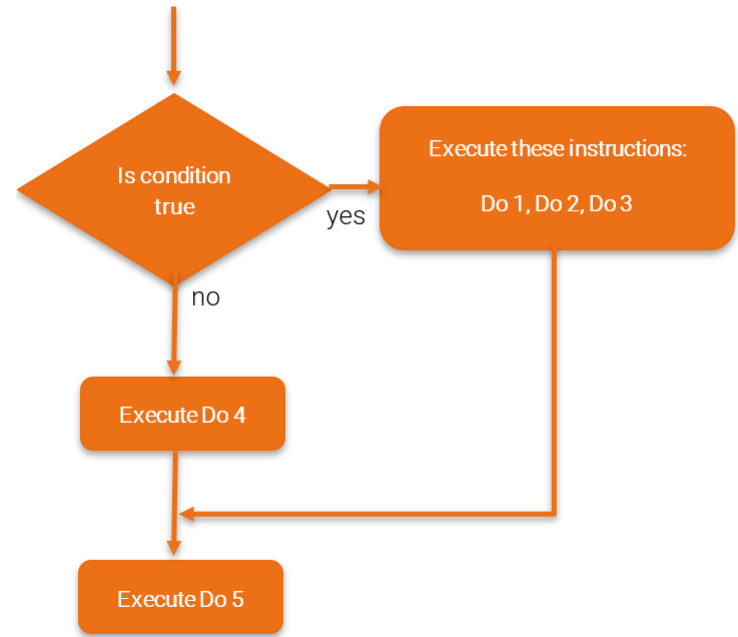
Can you modify this program so PicoH asks a different question and gives a different response if the answer is right?




```
when clicked
ask What is 2 times 2? and wait
if answer = 4 then
say That's spot on, you maths whizz! until done
if answer = 5 then
say No, I think that's wrong. until done
if answer = 3 then
say No, I think that's wrong. until done
if answer = elephant then
say No, I think that's wrong. until done
```



```
if condition is true then
  do 1
  do 2
  do 3
else
  do 4
do 5
```



Demonstration

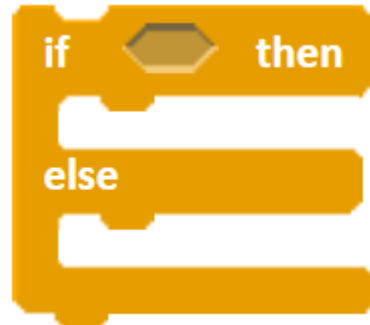
```
when clicked
ask "What is 2 times 2?" and wait
if answer = 4 then
say "That's spot on, you maths whizz!" until done
else
say "No, I think that's wrong." until done
```



Activity 2

Can you modify your program from Activity 1 so PicoH asks a question and responds in a different way depending on whether the answer entered is right or wrong?

Use this block in your program



Activity 2 Example

```
when clicked
ask "What is 2 times 2?" and wait
if answer = 4 then
say "That's spot on, you maths whizz!" until done
else
say "No, I think that's wrong." until done
```



Activity 3

Can you extend your program so PicoH asks a sequence of questions and responds to each based on the answer entered?

Here's an example:

```
when clicked
ask "What is 9 times 5?" and wait
if answer = 45 then
say "Yippee! You've got it!" until done
else
say "Okay, not quite right. It is 45!" until done
ask "In what year was Martin Luther King born?" and wait
if answer = 1929 then
say "That's right." until done
else
say "Not quite. It was 1929!" until done
ask "A cube has a side of 5cm what is its volume in cubic centimetres?" and wait
if answer = 125 then
say "Great. That's it." until done
else
say "Oh, I don't think so. It is 125 cubic centimetres." until done
```

Extension 1

Can you add a question that has two possible correct answers:

answer = Lisa or answer = Marge

Extension 2

Can you add a question that requires two answers to be correct



Plenary

Run this program. Does it do what you expected it to? Can you find the bugs and modify the program?

```
when clicked
ask Name a country with a name that begins with an F and wait
if answer contains France and answer contains Finland and answer contains Fiji then
  say Yes, that's right. until done
  set eyes to green
else
  say No, that's not right. until done
  set eyes to blue
```

The image shows a Scratch script with the following blocks:

- when clicked** (orange)
- ask** Name a country with a name that begins with an F **and wait** (blue)
- if** **answer** contains **France** **and** **answer** contains **Finland** **and** **answer** contains **Fiji** **then** (green)
- say** Yes, that's right. **until done** (purple)
- set eyes to** green (blue)
- else** (orange)
- say** No, that's not right. **until done** (purple)
- set eyes to** blue (blue)