

Making Decisions in Scratch using Selection Statements

Consider each of the following statements:

(1) It is raining outside

(2) Today is Tuesday

(3) We are in room 220

What do these statements have in common? How are they different?

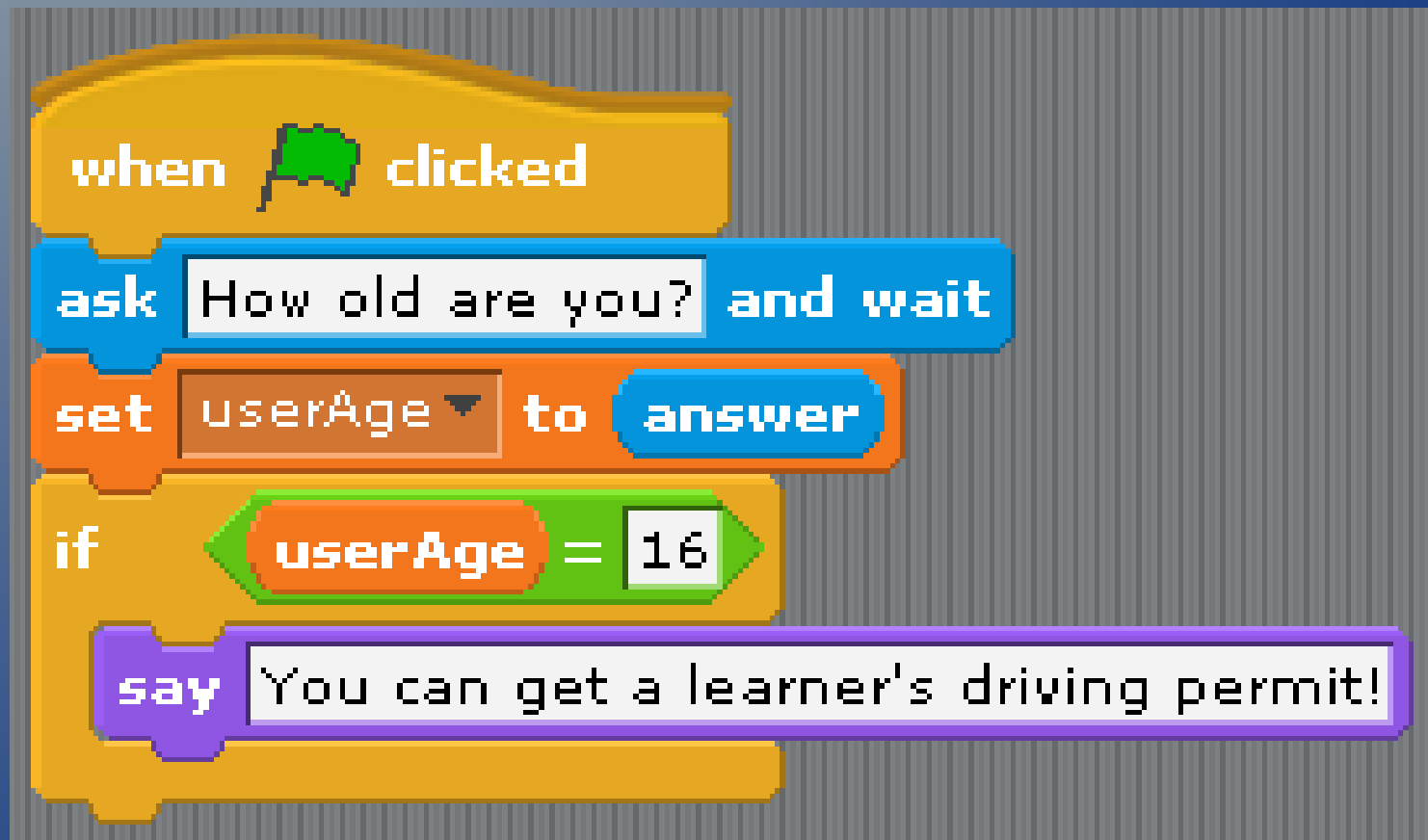
Conditions

Conditions are statements that can be tested as either TRUE or FALSE.

All computer decisions are based on the idea of two possible outcomes, either true or false.

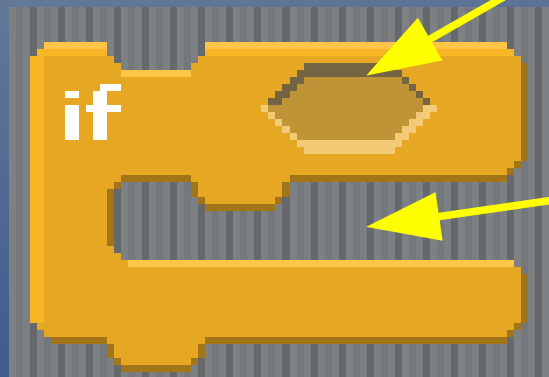
if you are 16 years old
then you can get a learner's driving permit
else you cannot

A Selection Statement in Scratch



IF Statement – One Selection

- the basic IF statement allows for a single selection, or decision



condition to test for true or false

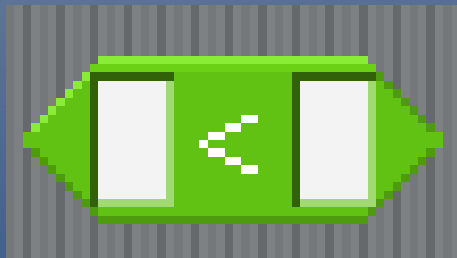
if the condition is TRUE, run the commands inside the block

if the condition is FALSE, skip over the block

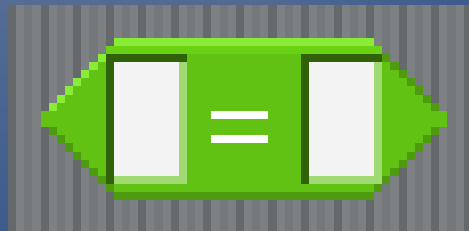
Comparison Operators

Making a decision using selection requires a comparison between two quantities or values.

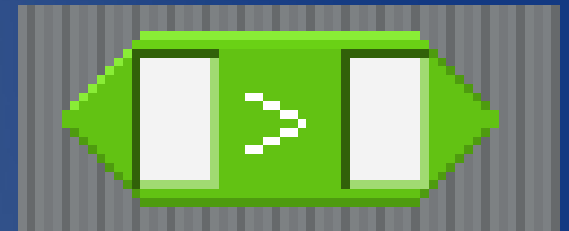
Each comparison will use one of the comparison operators. There are three basic types in Scratch.



the first value
is LESS THAN
the second
value

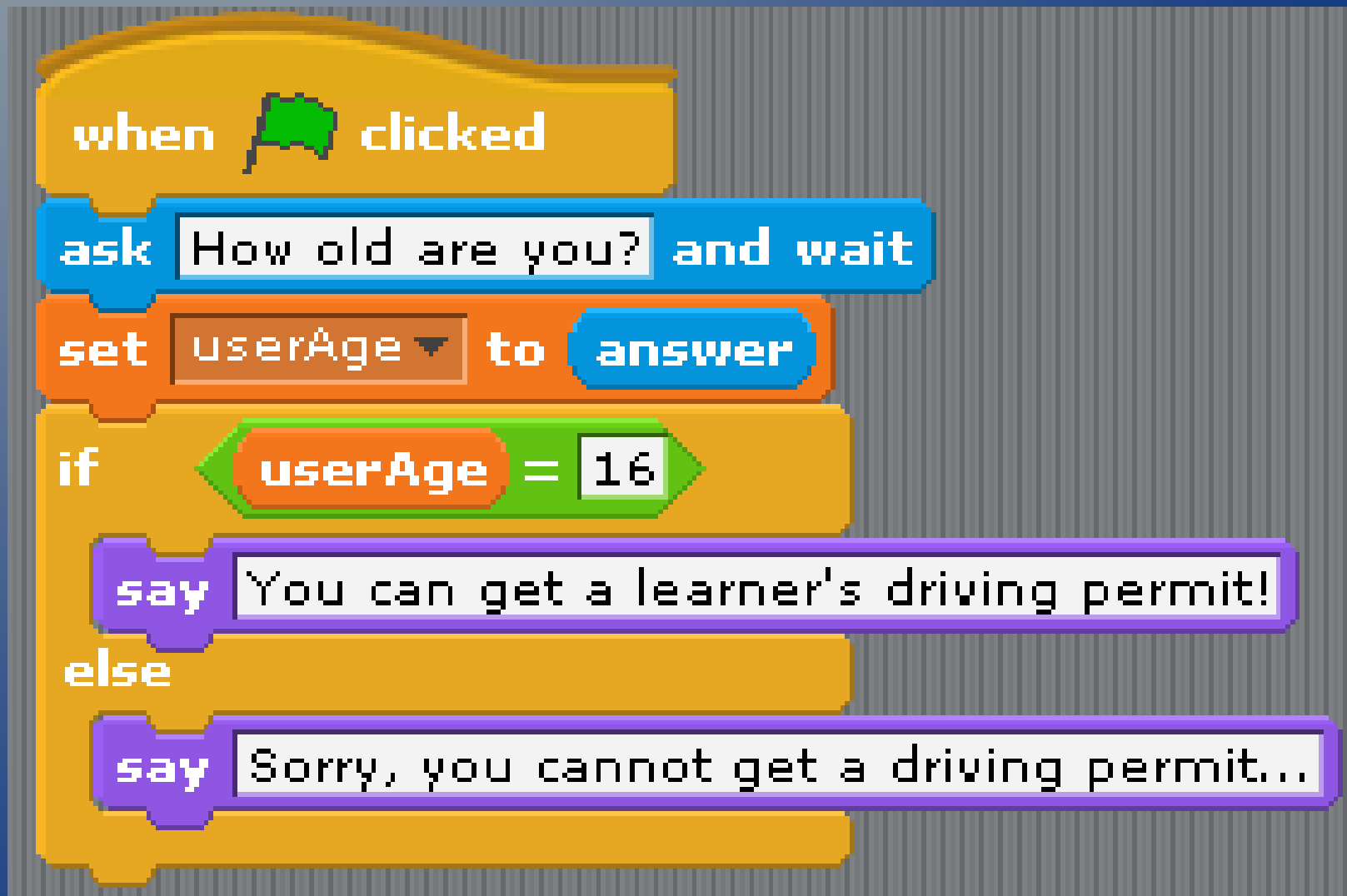


the first value
is EQUAL TO
the second
value



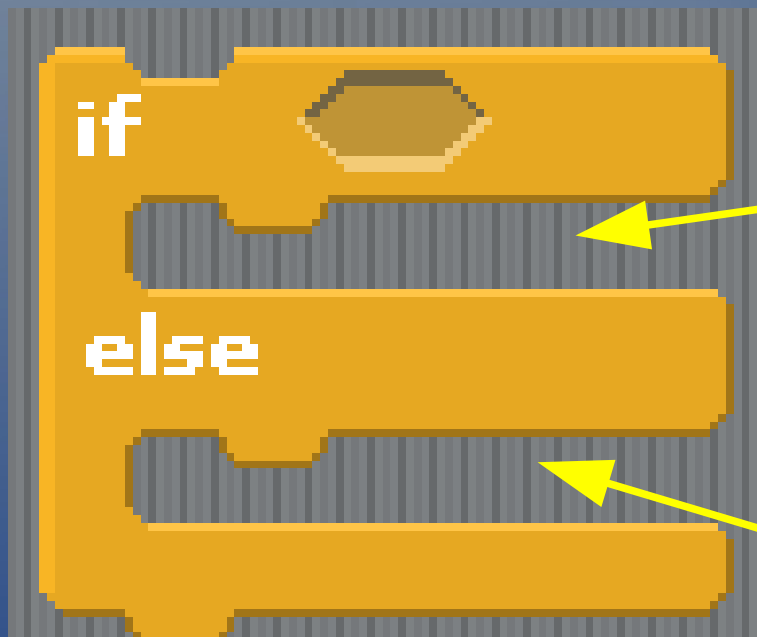
the first value
is GREATER
THAN the
second value

A Selection Statement in Scratch



IF/ELSE Statement – Two Selections

- To select between two options, add the ELSE branch to the IF statement

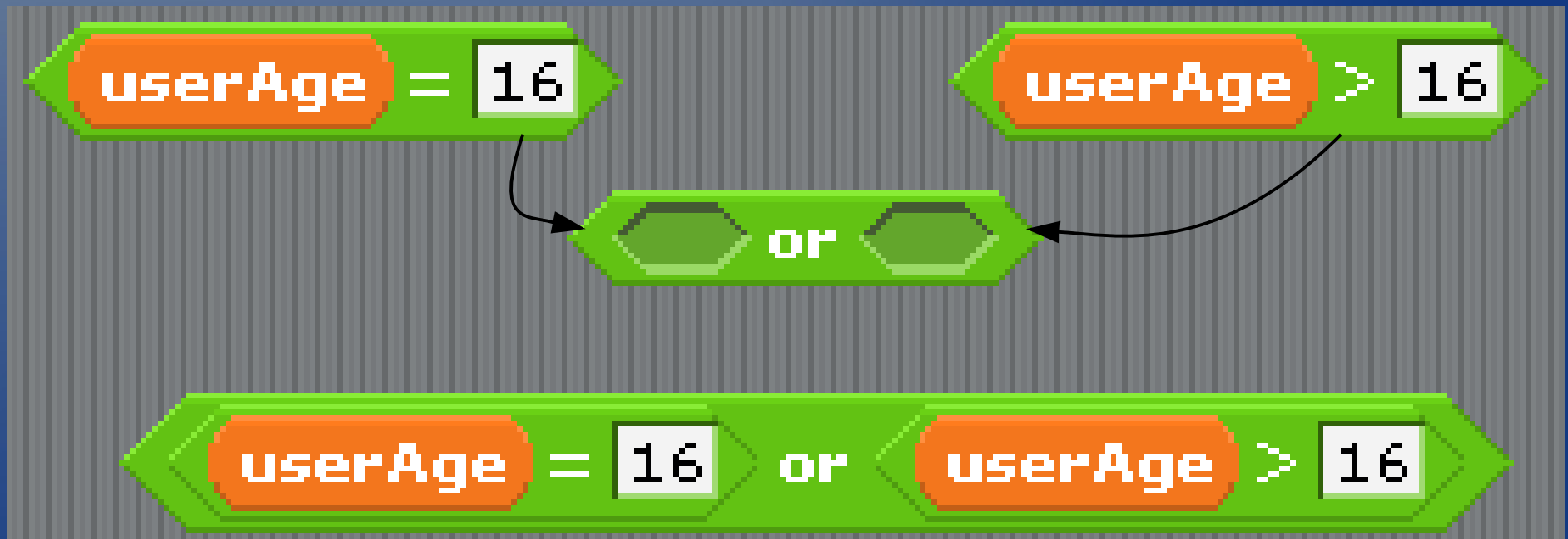


if the condition is TRUE, run the commands inside the block

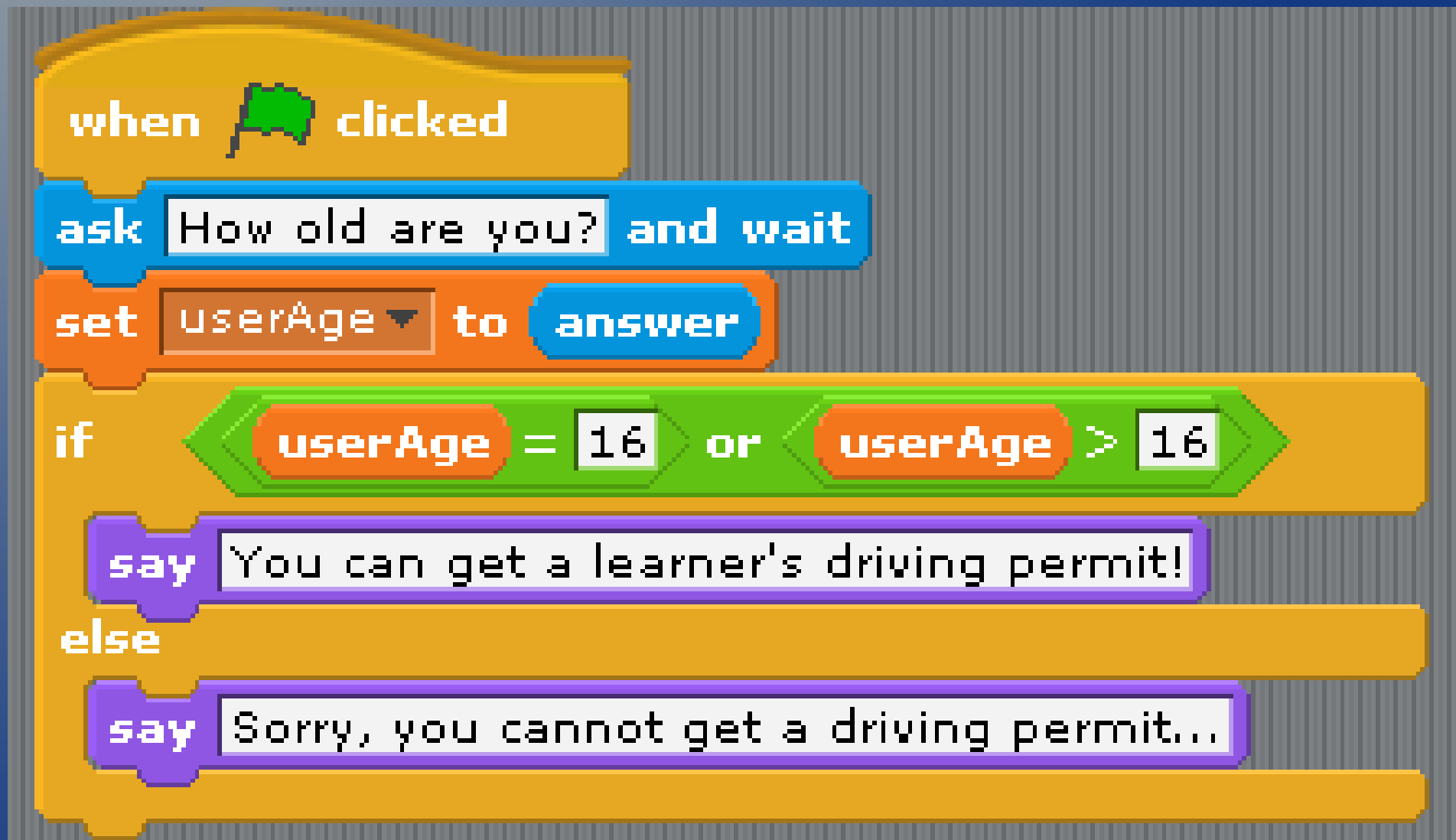
if the condition is FALSE, run the commands inside the block

Boolean Logic Operators

- Sometimes, our comparisons are more complicated.
- For example, to get a driver's permit, you need to be 16 years old **OR** older



A Selection Statement in Scratch



```
when green flag clicked
ask How old are you? and wait
set userAge to answer
if userAge = 16 or userAge > 16
say You can get a learner's driving permit!
else
say Sorry, you cannot get a driving permit...
```

The image shows a Scratch script with the following blocks:

- when green flag clicked** (yellow block)
- ask How old are you? and wait** (blue block)
- set userAge to answer** (orange block)
- if** block with a green condition: **userAge = 16 or userAge > 16**
- say You can get a learner's driving permit!** (purple block, inside the if block)
- else** block (yellow block)
- say Sorry, you cannot get a driving permit...** (purple block, inside the else block)