

unit 3

Graphics and Animation: Parameters in Python

`print`

`print()`

Python Grammar

- Almost every instruction is a verb.
- This verb is almost always followed by a set of parentheses.
- When required, extra information the verb needs is typed between the parentheses.

`pencolor('green');`

versus

`penup();`

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i.e., an “input”

means “in other words”

def: a **parameter** is the technical term for the extra bit of information that a Python verb might require.

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Grammar Fact: When ***multiple parameters*** are required, they are separated from each other with commas.

means "for example"

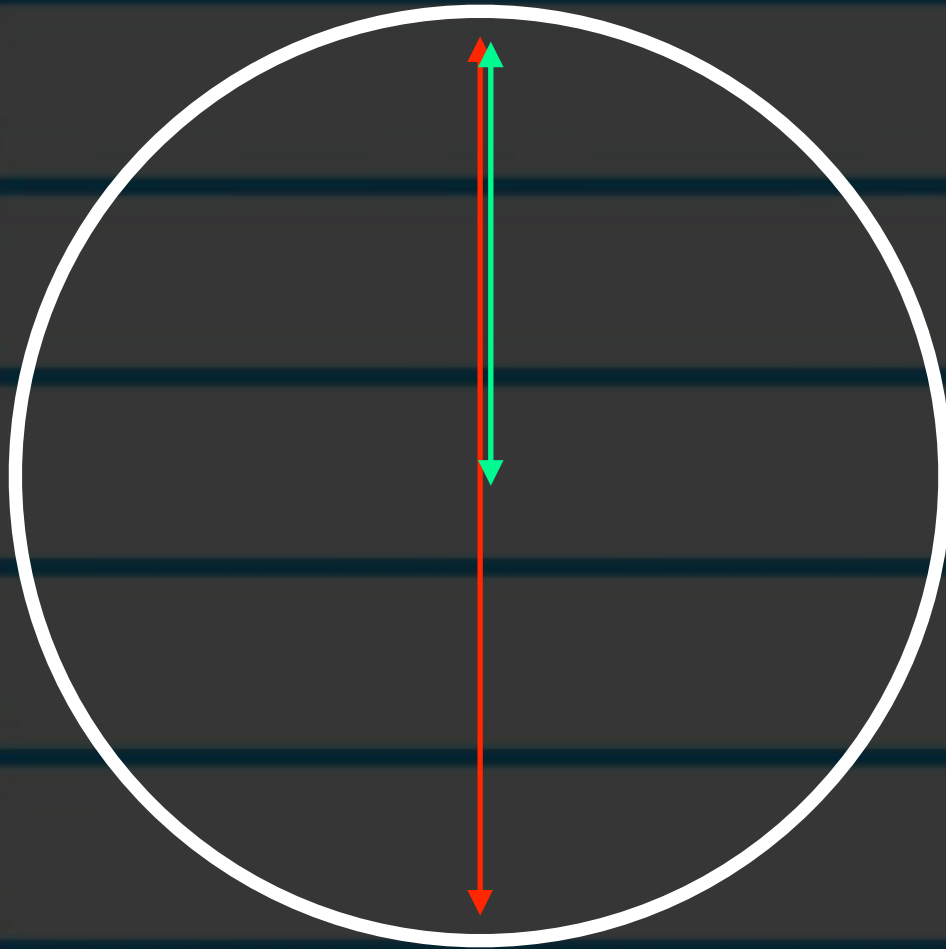
e.g., goto (20,50);

Drawing Circles:

- Python verb: `circle`
- Parameter(s) required? yes
—the radius of the circle
- example complete Python instruction:
`bob.circle (40);`

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Also called the "diameter"



The **width** of the circle
is not the size!

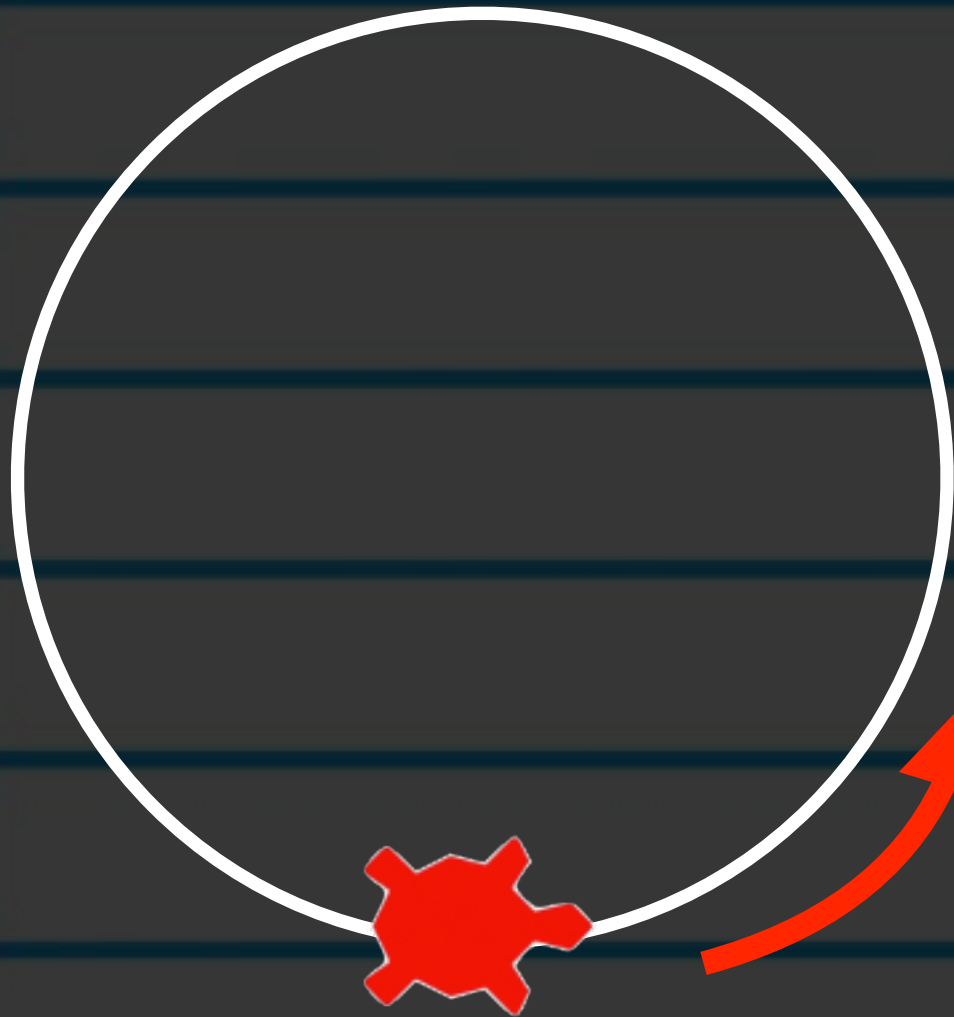
The **radius** of the circle
is what we use to
define the size!

The **radius** is half the **width**.

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Fact: The circle is drawn upwards from wherever the turtle is currently positioned.

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The circle is starts and ends at the bottom.

Make sure to move the turtle to the bottom before drawing the circle!