Knowledge Building Blocks:

- To recognise that data is transferred across networks using agreed protocols.
- To recognise that connections between computers allow access to shared stored files.
- To explain that data is transferred in packets.
- To recognise computers connected to the internet allow people in different places to work together.
- To discuss the opportunities that technology offers for communication and collaboration.
- To outline methods of communicating and collaborating using the internet.
- To choose methods of internet communication and collaboration for given purposes.
- To evaluate different methods of online communication and collaboration.
- To explain which types of media can be shared through the internet.
- To decide what you should and should not share online.
- To explain that communicating and collaboration using the internet can be public or private.

Parts of a Packet:

| To: 10 | From: 7 | Packet no. 1 | of | Total no. of packets. 1 | | H | e | l | l | o | ! | _ | _ |
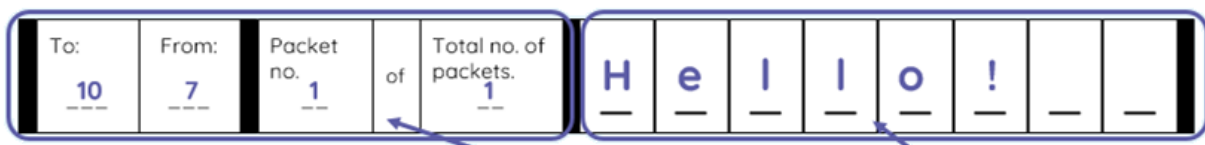
There are two main parts to a packet: the **header** and the **data payload**.

Public and Private:

Public	Private
Something in open view	Involving a particular person or group only

Key Vocabulary:

data
transferred
networks
protocols
connections
shared stored files
packets
internet
technology
communication
collaboration
media
public
private
IP address
Domain Name Server
web address
header
data payload
copyright
permission
privacy/security

Knowledge Building Blocks:

- To review an existing website.
- To recognise the relationship between HTML and visual display.
- To recognise that web pages can contain different media types.
- To recognise that web pages are written by people.
- To recognise that a website is a set of hyperlinked web pages.
- To recognise components of a web page layout.
- To create a new blank web page.
- To consider the ownership and use of images.
- To add text to a web page.
- To set the style of text on a web page.
- To change the appearance of text.
- To embed media in a web page.
- To recognise the need to preview pages.]
- To recognise the need for a navigation path.
- To add web pages to a website.
- To preview a web page.
- To insert hyperlinks between pages.
- To insert hyperlinks to another site.
- To recognise the implications of linking content owned by others.

Back/forward buttons

Tabs

Address bar
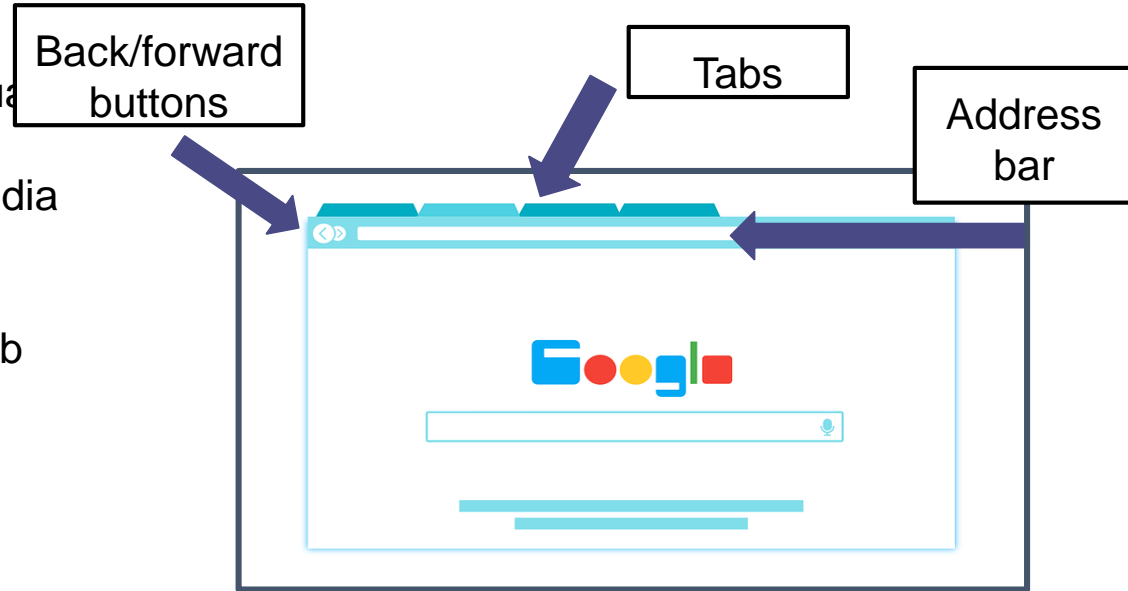
Key Vocabulary:
website
HTML code
visual display
media
hyperlink
components
layout
ownership
images/text/style
appearance
embed
preview
navigation path
add/insert
content
copyright
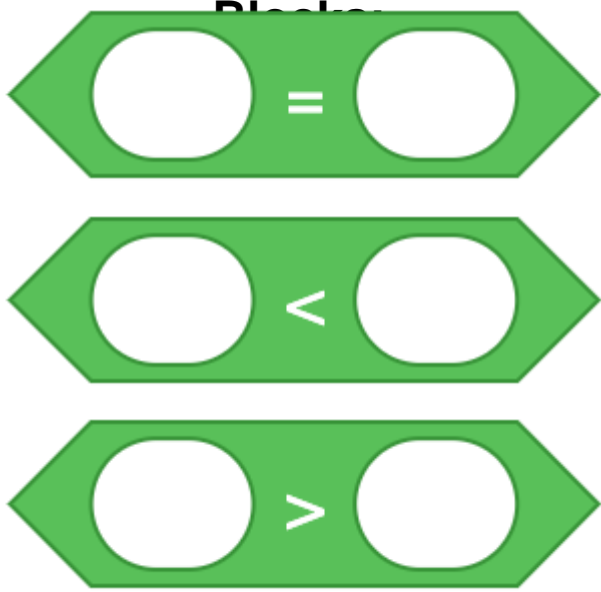device
evaluate

COPYRIGHT

FAIR USE

Knowledge Building Blocks:

- To define a 'variable' as something that is changeable.
- To identify examples of information that is variable.
- To explain that a variable can be used in a programme.
- To define a programme variable as a placeholder in memory for a single value.
- To explain that a variable has a name and a value.
- To identify a variable in an existing programme.
- To recognise that the value of a variable can be used by a programme.
- To recognise that the value of a variable can be updated.
- To experiment with the value of an existing variable.
- To identify that variable can hold numbers (integers) or letters (strings).
- To define the way that a variable is changed.
- To recognise that a variable can be set as a constant (fixed value).
- To choose a name that identifies the role of a variable to make it easier for humans to understand it.
- To explain the importance of setting up a variable at the start of a programme.
- To decide where in a programme to set a variable.
- To update a variable with a user input.
- To use an event in a programme to update a variable.
- To use a variable in a conditional statement to control the flow of a programme.
- To explain that there is only one value for a variable at any one time.
- To explain that if you change the value of a variable, you cannot access the previous value.
- To explain that if you read a variable, the value remains.
- To use the same variable in more than one location in a programme.
- To explain that the name of a variable is meaningless to the computer.
- To explain that the name of a variable needs to be unique.

Codes

when this sprite clicked
change score ▾ by 2

when this sprite clicked
change score ▾ by 10

when this sprite clicked
change score ▾ by -2

Operator Blocks:

=

<

>

Key Vocabulary:

variable
programme
placeholder
memory
single value
integers
strings
fixed value
input/output
conditional statement
control
flow
location
name
update
predict
outcome
block
abstraction
algorithms
sprites
backgrounds

Knowledge Building Blocks:

- To identify questions that can be answered using spreadsheet data.
- To explain what an item of data is in a spreadsheet.
- To outline that there are different software tools to work with data.
- To explain how the data type determines how a spreadsheet can process the data.
- To explain that formulas can be used to produce calculated data.
- To calculate data using a formula for each operation.
- To recognise cells can be linked.
- To use functions to create new data.
- To explain why data should be organised in a spreadsheet.
- To use existing cells within a formula.
- To recognise that a cell's value automatically updates when the value in a linked cell is changed.
- To evaluate results in comparison to the question asked.
- To choose suitable ways to present spreadsheet data.

Cell Reference:

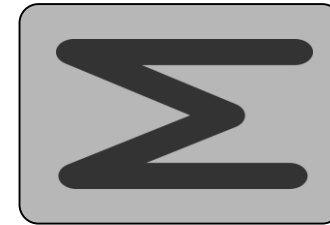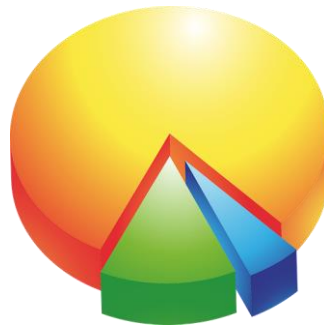|	A	B
1	Name	Number of days off
2	Reina	10
3	David	13
4	Yiannis	1
5	Bob	5
6	Amin	9

Calculations and Symbols:
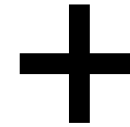
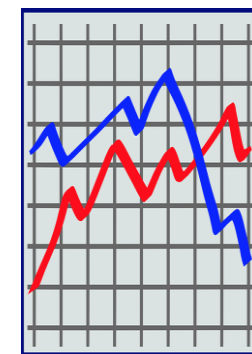**+** Add   **-** Subtract   ***** Multiply

∑

/ Divide

Charts:

Pie chart   Bar chart   Column chart   Line chart

Key Vocabulary:

spreadsheet
data
software tools
process
formulas
calculate
operation
linked
functions
cells
linked cell
evaluate
results
comparison
format
cell reference
data item
input/output
operations
duplicating
evaluate

Creating Media – 3D Modelling

Knowledge Building Blocks:

- To explain that 3D models can be created on a computer.
- To position 3D shapes relative to one another.
- To recognise that a 3D environment can be viewed from different perspectives.
- To use digital tools to modify 3D objects.
- To recognise that digital tools can be used to manipulate 3D objects.
- To combine objects to create a 3D digital artefact.
- To show how placeholders can create holes in 3D objects.
- To use digital tools to accurately size 3D objects.
- To recognise that artefacts can be broken down into a collection of 3D objects.
- To construct a 3D model which reflects a real world object.
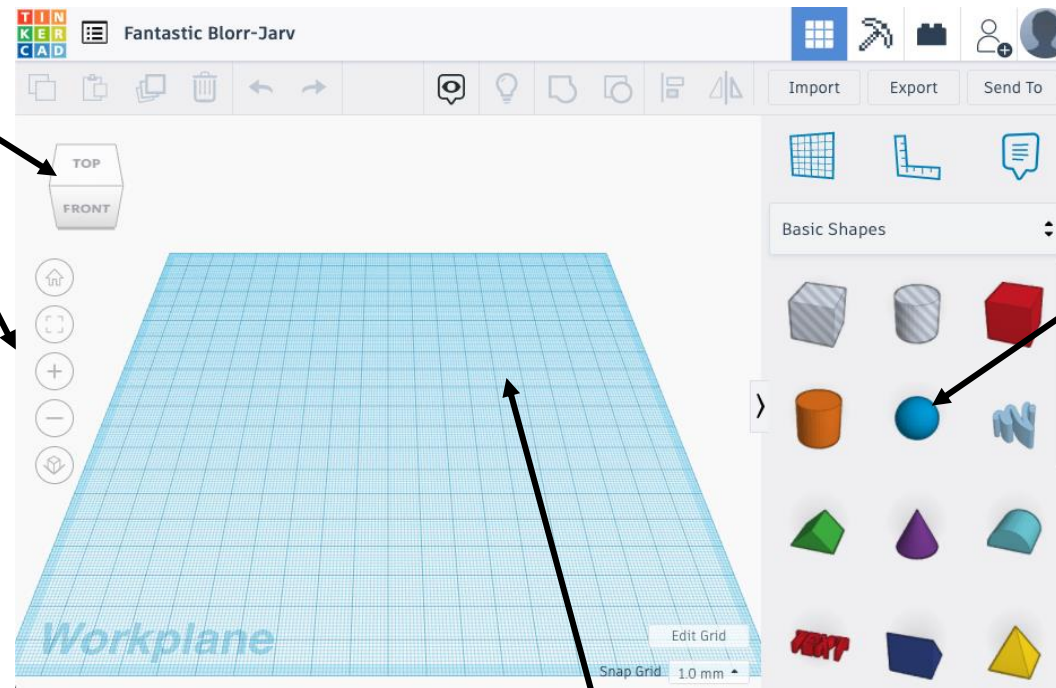
Application:

TINKERCAD

AUTODESK Tinkercad

Key Vocabulary:

3D model
perspectives
digital tools
modify
manipulate
artefact
placeholders
size/resize
collection
dimensions
rotate
duplicate
grouping/ungrouping
architecture
evaluate
modify

View tools

Shapes

Fantastic Blorr-Jarv

Import   Export   Send To

TOP
FRONT

Basic Shapes

Workplane

Edit Grid
Snap Grid   1.0 mm

Workplane

Knowledge Building Blocks:

- To define a 'variable' as something that is changeable.
- To identify examples of information that is variable.
- To explain that a variable can be used in a programme.
- To define a programme variable as a placeholder in memory for a single value.
- To explain that a variable has a name and a value.
- To identify a variable in an existing programme.
- To recognise that the value of a variable can be used by a programme.
- To recognise that the value of a variable can be updated.
- To experiment with the value of an existing variable.
- To identify that variable can hold numbers (integers) or letters (strings).
- To define the way that a variable is changed.
- To recognise that a variable can be set as a constant (fixed value).
- To choose a name that identifies the role of a variable to make it more usable.
- To explain the importance of setting up a variable at the start of a programme.
- To decide where in a programme to set a variable.
- To update a variable with a user input.
- To use an event in a programme to update a variable.
- To use a variable in a conditional statement to control the flow of a programme.
- To explain that there is only one value for a variable at any one time.
- To explain that if you change the value of a variable, you cannot access the previous value.
- To explain that if you read a variable, the value remains.

Micro:bit

If….then…else…statement in programming:
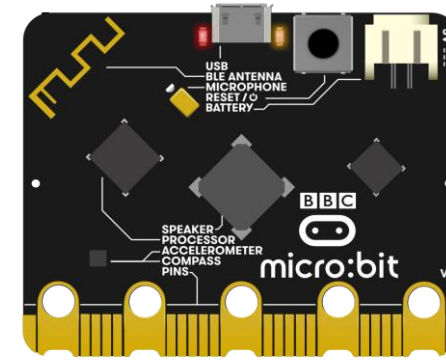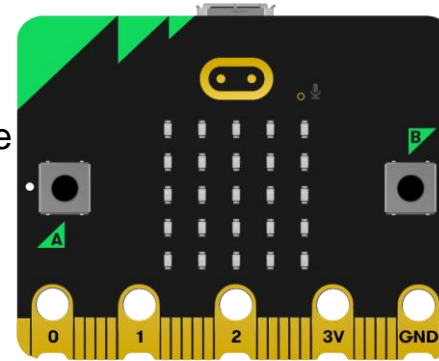
Key Vocabulary:

variable
information
programme
placeholder
single value
Integers/strings
fixed value
input/output
conditional statement
control flow
location
computer
micro:bit
process
device
selection
accelerometer
motion
operands
modify
navigational
code
technology
sensors
algorithm
debug
emulator