

TEACHER RESOURCE

Term Lesson Pack

Ready-to-teach lessons across subjects

Presenter Name · 4 · 2026



Lessons in this pack

01

Introduction to Python

02

Fractions Made Easy

03

Trigonometry Basics

04

Our Indian Constitution

01

INTRODUCTION TO PYTHON



Your first programs: print, variables and input

Lesson 1 · Introduction to Python

Learning objectives

- Write and run a Python program
- Store values in variables
- Take input from the user
- Do simple calculations

YOU ALREADY KNOW

How to open and save files.

What is a program?



Diagram / picture

A program is a list of instructions a computer follows.

Python reads lines from top to bottom. `print()` shows output, variables remember values and `input()` asks the user for information.

Key terms

01

Variable

A named box that stores a value.

02

String

Text inside quotes, e.g. "Hello".

03

Integer

A whole number, e.g. 42.

Your first program



Open

IDLE or an online editor



Ask

`name = input("Name? ")`



Print

`print("Hello", name)`



Run

Press F5 and test

Data types

Type	Example	Use
int	15	Counting
float	3.14	Measuring
str	"Asha"	Text

Use `type()` to check any value.

Did you know?

1991

Python first released

#1

language for beginners

Not a snake

named after a comedy
show

Real-life examples



Image 1

Games

Simple quiz games



Image 2

Science

Data and graphs



Image 3

Websites

Back-end servers

Scratch vs Python

Scratch

- ✓ Drag-and-drop blocks
- ✓ Great for starting
- ✓ Visual output

Python

- Typed code
- Used by professionals
- Runs everywhere

Check your understanding

- What does `print()` do?
- Store your age in a variable
- Why is text put in quotes?
- What is $3 + 4 * 2$?

Activity time

01

Greeting bot

Ask name and age, print a message.

02

Calculator

Add two numbers from input.

03

Bug hunt

Fix five broken programs.

Homework

- Print your timetable with Python
- Convert Celsius to Fahrenheit
- Make three errors and note the messages

02

FRACTIONS MADE EASY



Parts of a whole, equivalent fractions and comparing

Lesson 2 • Fractions Made Easy

Learning objectives

- Understand a fraction as part of a whole
- Find equivalent fractions
- Compare fractions
- Use fractions in everyday problems

YOU ALREADY KNOW

How to divide a shape into equal parts.

What is a fraction?

A fraction shows equal parts of a whole.

The bottom number (denominator) tells how many equal parts the whole is cut into. The top number (numerator) tells how many parts we take.



Diagram / picture

Key terms

01

Numerator

The number of parts we take.

02

Denominator

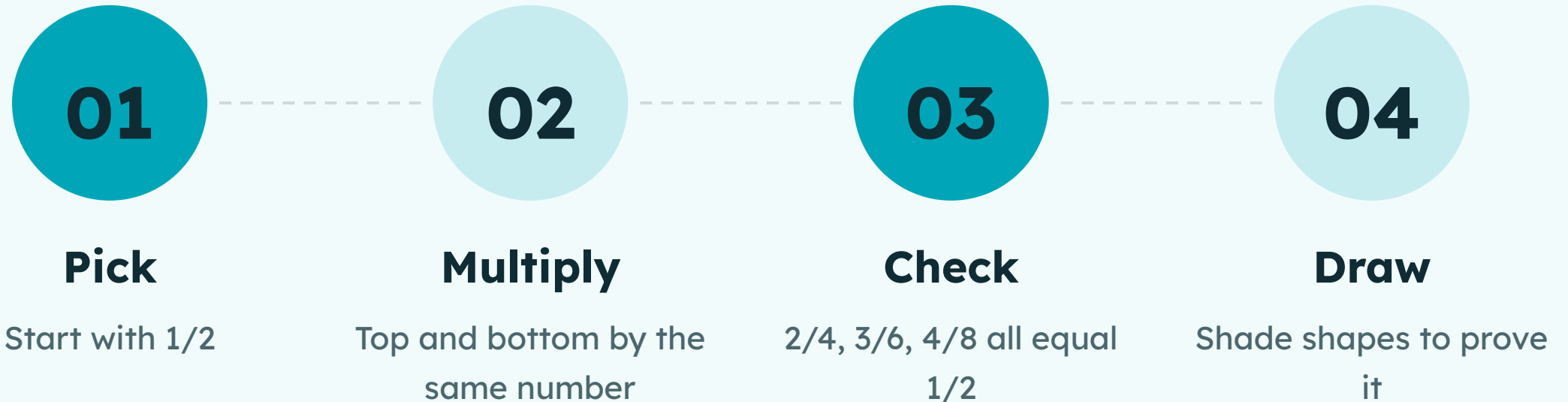
The number of equal parts in the whole.

03

Equivalent

Different fractions with the same value.

Finding equivalent fractions



Comparing with one half

Fraction	Picture	Compared with $\frac{1}{2}$
$\frac{1}{4}$	One of four parts	Smaller
$\frac{3}{4}$	Three of four parts	Bigger
$\frac{2}{4}$	Two of four parts	Equal

Draw each fraction to check.

Did you know?

$1/2$

the most common
fraction in recipes

100

hundredths make one
whole

4,000

years of fractions in
history

Real-life examples



Image 1

Sharing food

Pizza, rotis and fruit



Image 2

Time

Half an hour, quarter past



Image 3

Money

50 paise is half a rupee

Proper vs improper

Proper

- ✓ Numerator smaller
- ✓ Less than one whole
- ✓ e.g. $\frac{3}{5}$

Improper

- Numerator bigger
- More than one whole
- e.g. $\frac{7}{4}$

Check your understanding

- Which is bigger: $\frac{3}{8}$ or $\frac{5}{8}$?
- Write two fractions equal to $\frac{1}{3}$
- What fraction of an hour is 15 minutes?
- Shade $\frac{2}{5}$ of a rectangle

Activity time

01

Fraction strips

Cut strips into halves, quarters and eighths.

02

Pizza maths

Share paper pizzas fairly.

03

Fraction hunt

Find fractions around the classroom.

Homework

- Exercise 4.2, questions 1–6
- Find three fractions at home and draw them
- Make a fraction wall chart

03

TRIGONOMETRY BASICS



Sine, cosine and tangent in right triangles

Lesson 3 • Trigonometry Basics

Learning objectives

- Name the sides of a right triangle
- Define sin, cos and tan
- Recall standard angle values
- Solve height and distance problems

YOU ALREADY KNOW

**Pythagoras
theorem and
similar triangles.**

Ratios in a right triangle



Diagram / picture

Trigonometric ratios compare the sides of a right triangle.

For an angle θ : $\sin \theta = \text{opposite/hypotenuse}$, $\cos \theta = \text{adjacent/hypotenuse}$, $\tan \theta = \text{opposite/adjacent}$. The ratios are the same for every triangle with that angle.

Key terms

01

Hypotenuse

The longest side,
opposite the right angle.

02

Opposite

The side facing angle θ .

03

Adjacent

The side next to θ .

Solving a height problem

01

Draw

Sketch the triangle

02

Label

Mark θ and the known side

03

Choose

sin, cos or tan

04

Solve

Rearrange and calculate

Standard values

Angle	sin	cos	tan
30°	$1/2$	$\sqrt{3}/2$	$1/\sqrt{3}$
45°	$1/\sqrt{2}$	$1/\sqrt{2}$	1
60°	$\sqrt{3}/2$	$1/2$	$\sqrt{3}$

Learn these with the hand trick.

Did you know?

2,000+

years of trigonometry

SOH-CAH-TOA

the classic memory aid

GPS

uses trigonometry

Real-life examples



Image 1

Architecture

Roofs and ramps



Image 2

Navigation

Ships and aircraft



Image 3

Surveying

Heights of buildings

sin vs cos

sin θ

- ✓ Opposite / hypotenuse
- ✓ Rises from 0° to 90°
- ✓ $\sin 90^\circ = 1$

cos θ

- Adjacent / hypotenuse
- Falls from 0° to 90°
- $\cos 0^\circ = 1$

Check your understanding

- Write $\sin \theta$ in terms of sides
- Find $\tan 45^\circ$
- If $\sin \theta = 1/2$, find θ
- A ladder makes 60° with the ground; find the height it reaches

Activity time

01

Clinometer

Make one from a protractor and a straw.

02

Measure the school

Find the flagpole height.

03

Value bingo

Bingo with standard values.

Homework

- Exercise 8.1, questions 1–5
- Prove $\sin^2\theta + \cos^2\theta = 1$
- Estimate the height of a building near home

04

**OUR INDIAN
CONSTITUTION**



Rights, duties and how our democracy works

Lesson 4 • Our Indian Constitution

Learning objectives

- Know why a country needs a constitution
- List key features of our Constitution
- Explain Fundamental Rights and Duties
- Understand the role of citizens

YOU ALREADY KNOW

India became a republic on 26 January 1950.

Why a constitution?

A constitution is the supreme law that guides how a country is governed.

It sets out the powers of government, protects citizens' rights and lists their duties. The Indian Constitution is the longest written constitution in the world.



Diagram / picture

Key terms

01

Preamble

The introduction stating the Constitution's ideals.

02

Fundamental Rights

Basic rights guaranteed to citizens.

03

Fundamental Duties

Responsibilities every citizen should follow.

How a law is made



Bill

A proposal is introduced



Debate

Both Houses discuss it



Vote

Majority approval



Assent

The President signs it

Some Fundamental Rights

Right	What it means	Example
Equality	Equal before law	No discrimination
Freedom	Speech, movement, work	Express opinions
Education	Culture and education	Learn your language

Research the remaining rights for homework.

Did you know?

26 Nov 1949

Constitution adopted

22

languages in the Eighth
Schedule

11

Fundamental Duties

Real-life examples



Image 1

Voting

Adults elect leaders



Image 2

Courts

Protect our rights



Image 3

School

Right to education

Rights and duties

Rights

- ✓ What we are entitled to
- ✓ Protected by courts
- ✓ e.g. freedom of speech

Duties

- What we owe the nation
- Moral responsibility
- e.g. respect the flag

Check your understanding

- When did the Constitution come into force?
- Name three Fundamental Rights
- What is the Preamble?
- Name a duty you follow

Activity time

01

Class constitution

Write five rules and rights for your class.

02

Mock parliament

Debate and vote on a class bill.

03

Rights poster

Illustrate one right.

Homework

- Read the Preamble and list key words
- Write about one duty you practise
- Ask an adult about voting

Thank you

Questions and discussion.

Presenter Name

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