



EduTrend Contents

P4C · REASONS AND ARGUMENTS · HIGH SCHOOL

Deduction and Induction

Two ways of reasoning and the puzzle of whether the future will be like the past

Ages 15–18

Level: Advanced

60 minutes

Circle and pairs · up to 30

Activity 05

Inside: activity at a glance · step-by-step session plan · facilitator notes · 3 student worksheets · assessment checklist

ACTIVITY 05 · AT A GLANCE

Deduction and Induction

Students sort arguments into deductive (if the premises are true, the conclusion must be) and inductive (the premises make the conclusion likely). Examples include “every swan I have seen is white, so all swans are white” and “all squares have four sides; this is a square; so it has four sides”. They then meet the problem of induction, raised by the philosopher David Hume, and enquire into whether we can trust patterns.

Learning outcomes

By the end of the session students can:

- distinguish deduction and induction;
- evaluate generalisations;
- explain the problem of induction;
- relate reasoning types to science.

KEY WORDS

deduction · induction ·
generalisation · probability ·
certainty · Hume

CURRICULUM LINKS

Science: generalising from data.
Maths: proof. Philosophy:
epistemology.

1

STIMULUS

Share something to
think about

2

THINK

Quiet thinking time

3

QUESTION

Create and choose
a question

4

ENQUIRE

Reason together

5

BUILD

Agree, disagree,
add

6

REFLECT

Last words

Materials (per class)

- Argument cards
- Sorting grid
- Question and thinking-move cards
- Worksheets 1, 2 and 3

Before the session

- Read the stimulus and note possible concepts.
- Prepare question and thinking-move cards.
- Set out a circle so everyone can see each other.
- Print the worksheets.

SAFETY

Everyone may pass. Discuss ideas, not people, and use the story or invented examples rather than personal situations.

ACTIVITY 05 · SESSION PLAN

Step by step

Stay neutral: ask for reasons, examples and counter-examples rather than giving your own view.

Time	What happens	Say or ask
0–10 min Stimulus	Share the deductive and inductive argument cards.	<i>"What did you notice?"</i>
10–22 min Questions	Students create questions in pairs and vote on one.	<i>"Which question is most interesting to talk about?"</i>
22–52 min Enquiry	Enquire into the chosen question, building on each other's ideas.	<i>"Can we be sure the future will be like the past?"</i>
52–60 min Last words	Each person says one last thought or passes.	<i>"Has your thinking changed?"</i>

CHALLENGE CARD (print or copy onto the board)

Explain whether we are justified in believing the sun will rise tomorrow.

ACTIVITY 05 · FACILITATOR NOTES

The philosophy in brief

Deductive arguments aim at certainty; inductive arguments aim at probability.

David Hume argued in the 18th century that we cannot prove by reasoning alone that the future will resemble the past.

Common ideas to listen for

- “Induction is just guessing.” It can be very reliable.
- “Deduction gives new facts.” It unpacks what premises contain.
- “Science proves things deductively.” Much of science is inductive.

Adapting the activity

Support

Sort six examples.

Stretch

Research the black swan example.

WORKSHEET 1

Sort the arguments

Name: _____

Class: _____ Date: _____

Deductive or inductive?

Sort the arguments

Argument	Type	How strong?

WORKSHEET 2

Thinking moves

Use these in the enquiry.

Thinking moves

Thinking move	My example
I agree with... because...	
I disagree with... because...	
An example is...	
A counter-example is...	
Building on what... said...	

WORKSHEET 3

Last words

Before and after.

Is inductive reasoning ever certain? Before the enquiry I thought... Now I think... because...

FOR THE TEACHER

Assessment checklist

Use during the session. One sheet covers up to eight students; copy as needed.

Student	Asks a philosophical question	Gives reasons and examples	Listens and builds on others

Suggested codes: W = working towards · E = expected · G = greater depth

ABOUT THIS ACTIVITY

Deduction and Induction is a sample activity from the EduTrend Contents P4C Reasons and Arguments programme (high school, level: advanced). Every activity in the programme follows the same format: a practical challenge, a clear session plan, facilitator notes and ready-to-print worksheets, so that teachers, club leaders and parents can run it without extra preparation.

Full 15-, 20- and 32-week programmes are available from EduStore at edutrend.org.

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