

EduTrend Contents

G4C · PUZZLE PLAY · MIDDLE SCHOOL

Puzzle Makers

Design a grid logic puzzle with one solution, test it on another pair and improve it

Ages 12–14	Level: Intermediate	45 minutes	Pairs · up to 30	Activity 04

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

ACTIVITY 04 · AT A GLANCE

Puzzle Makers

Pairs design a small logic puzzle, such as a 4-by-4 grid where each row and column contains four different symbols, with some symbols given as clues. They solve their own puzzle to check it has exactly one solution. Another pair then tests it and reports any stuck points or multiple answers. Designers revise their clues and swap again.

Learning outcomes

By the end of the session students can:

- design a logic puzzle;
- check for a unique solution;
- test with users;
- revise from feedback.

KEY WORDS

logic · grid · clue · unique solution · test · revise

CURRICULUM LINKS

Maths: logic and reasoning. Design: user testing.

1	2	3	4	5	6
WARM UP	**EXPLAIN**	**PLAY**	**CHECK**	**TALK**	**CLOSE**
Minds ready	One game, clear rules	Think before you move	Was it a good move?	How did you work it out?	Calm and positive

Materials (per pair)

- Grid templates
- Pencils and erasers
- Worksheets 1, 2 and 3

Before the session

- Print grids.
- Model a simple puzzle.
- Explain unique solutions.
- Plan pairs.

SAFETY

Keep feedback specific and kind.

ACTIVITY 04 · SESSION PLAN

Step by step

Checking for a unique solution is itself a demanding logic task.

Time	What happens	Say or ask
0–5 min **Warm up**	Solve a mini 3-by-3 grid.	*"How did you know?"*
5–10 min **Explain**	Rules and unique solution.	*"Why only one answer?"*
10–35 min **Design**	Design, check, test, revise.	*"Did testers get stuck?"*
35–45 min **Talk**	Share best puzzles.	*"What makes a good clue?"*

CHALLENGE CARD (print or copy onto the board)

Create a puzzle with exactly one solution that another pair can solve.

ACTIVITY 04 · FACILITATOR NOTES

The puzzle game know-how in brief

Designing a puzzle requires thinking from the solver's point of view.

Testing with users reveals unclear clues.

Common ideas to listen for

- "More clues make it better." Too many make it trivial.
- "If we can solve it, it works." Others may find other answers.
- "Hard puzzles are best." Fair challenge is best.

Adapting the activity

Support

Start with a 3-by-3 grid.

Stretch

Remove clues until only one solution remains.

WORKSHEET 1

Puzzle design

Name: _____ Class: _____ Date: _____

Draw your grid and clues.

Grid

WORKSHEET 2

Test report

Record tester feedback.

Feedback

Tester note	Our change

WORKSHEET 3

Reflection

Reflect.

A good clue is one that...

FOR THE TEACHER

Assessment checklist

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

Student	Designs a working puzzle	Checks uniqueness	Revises from testing

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

ABOUT THIS ACTIVITY

Puzzle Makers is a sample activity from the EduTrend Contents G4C Puzzle Play programme (middle school, level: intermediate). 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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