

EduTrend Contents

G4C · CONSTRUCTIVE PLAY · MIDDLE SCHOOL

Loose Parts Budget Challenge

Buy loose parts from a price list to meet a build challenge at the lowest cost

Ages 12–14	Level: Intermediate	45 minutes	Teams of 3 · 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

Loose Parts Budget Challenge

Each loose part has a price: blocks 2 points, tubes 3, card 1, tape 1 per strip. Teams receive a challenge, such as a tower that holds a book, and a budget of 40 points. They plan, "buy" parts, build and test. Teams compare cost and performance and discuss trade-offs between strength and cost.

Learning outcomes

By the end of the session students can:

- plan within a budget;
- calculate costs;
- balance cost and performance;
- evaluate trade-offs.

KEY WORDS

budget · cost · trade-off · plan · efficient · evaluate

CURRICULUM LINKS

Maths: money and calculation. Design and technology: constraints.

1	2	3	4	5	6
WARM UP	**EXPLAIN**	**PLAN**	**BUILD**	**TALK**	**CLOSE**
Minds and hands ready	One challenge card	Think before you build	Try, test, change	What would happen if…?	Photo and tidy

Materials (per team)

- Loose parts
- Price lists and order forms
- Test loads such as books
- Worksheets 1, 2 and 3

Before the session

- Set prices.
- Prepare order forms.
- Choose challenges.
- Model an order.

SAFETY

Keep builds low; test loads gently.

ACTIVITY 04 · SESSION PLAN

Step by step

A budget turns building into a planning and reasoning problem.

Time	What happens	Say or ask
0–5 min **Warm up**	Price a simple build.	*"What would it cost?"*
5–12 min **Plan**	Plan and order parts.	*"Can you afford it?"*
12–37 min **Build**	Build, test, reorder if allowed.	*"Was it worth the cost?"*
37–45 min **Compare**	Cost versus performance.	*"What was the best value?"*

CHALLENGE CARD (print or copy onto the board)

Meet the challenge within budget and explain your best-value decision.

ACTIVITY 04 · FACILITATOR NOTES

The constructive play know-how in brief

Planning with constraints encourages careful reasoning.

Comparing cost and performance introduces trade-offs.

Common ideas to listen for

- “More parts means stronger.” Design matters.
- “Cheapest is best.” It must still work.
- “Budgets limit creativity.” Constraints spark ideas.

Adapting the activity

Support

Provide a simpler price list with fewer items.

Stretch

Add a penalty for unused parts.

WORKSHEET 1

Order form

Name: _____ Class: _____ Date: _____

Plan your purchase.

Order

Part	Price	Quantity	Cost

WORKSHEET 2

Results

Record cost and performance.

Results

Total cost	Test result	Value comment

WORKSHEET 3

Reflection

Reflect.

Our best-value decision was...

FOR THE TEACHER

Assessment checklist

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

Student	Stays within budget	Calculates accurately	Evaluates trade-offs

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

ABOUT THIS ACTIVITY

Loose Parts Budget Challenge is a sample activity from the EduTrend Contents G4C Constructive 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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