Monkey Republic: How Do We Share the Bananas?

Plan 35-45 minutes: predict on paper, then check on one projected computer. The local-model lesson needs a computer to run its download. Split advanced calculations across two sessions.

Learning goal

Read the payoff table independently, total both players and the pair, and give a counterexample separating personal gain from pair gain.

Before starting

Add/subtract small integers. Explain -1 as returning one to the bank. The starting five are not score; restore stocks when restarting. No code or account is required.

Materials

Each player needs one S and one G card; two worksheet pages per group. Use banana candy or the printable banana tokens. Two players and one recorder: 40 bananas cover up to five rounds, starting with five each and 30 in the bank. Starting stock is not score.

Class sequence (5 / 10 / 10 / 10 min, plus 5-10 min discussion)

1. Predict (5 min): reveal both choices, then use SS=3/3, SG=–1/5, GS=5/–1, GG=0/0. Work one example and check which number belongs to each player.

2. Play (10 min): aim first for your own total. Choose cards face down, reveal together and record three rounds. The lab also waits for both choices to lock before revealing.

3. Observe (10 min): change the classroom objective to pair total, keeping payoffs fixed. Play again and compare individual versus combined gains; this is a classroom scoring task.

4. Challenge (10 min): find a move that increases your current gain but reduces the pair total. Compare with the original trust game’s 3/5/0/1 table without mixing answer keys.

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Worked example

For SS, SG, GG: left earns 3–1+0=2, right 3+5+0=8, pair total 10. Sharing together gives six per round; one grab gives four.

Check understanding: ask before showing an answer

If the other shares, how much more do I get by grabbing? How much does the pair lose? Does that prove always grabbing is best in every repeated game?

Expected answers and worksheet check

The individual gains two (5–3) while the pair loses two (6–4). This does not establish a universal repeated-game strategy. Worksheet: against S, G gives 5>3; against G, G gives 0>–1. SG,GS,SS totals seven each and 14 together. SS maximizes the current pair total at six; G maximizes the current personal payoff. Check children's puzzles with this same table.

Keep the claim within its limits

Results depend on the stated payoffs and objective. Banana scores do not grade children's character; one encounter does not solve every repeated game. Do not substitute the original trust game's 0/5 and 1/1 outcomes.

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Teacher setup and roles

Open the Share lab with fixed Win-Win payoffs and no random mistakes. Lock both choices before revealing. Rotate recorders and read left, right and pair columns.

Use banana candy or paper bananas. Give each player five, but start scores at zero. Take positive gains from the bank and return one for -1. The starting five do not count as score. Limit physical matches to five rounds; restore starting stocks between matches and eat candy after the match. Choose face down, then reveal together.

Prompts and evidence

Ask “better under which goal?” before looking at results. Explaining personal five versus pair four demonstrates the distinction; do not reward a preferred strategy.

Support and extension

Support: compare only SS and SG, returning one to the bank for -1. Extend: keep one opponent for five rounds and compare immediate gain with later responses, leading into the memory lesson.

At home

Ask a parent to choose personal total or pair total as the goal. Play three rounds, swap goals and check the sums.

Continue learning

Monkey Republic: Give Your Monkey a Memory / Cooperate or Not? The Trust Game / The Last Coin: Think Backward to Win

Teacher reference (links also on the lesson page)

Lucas Academy: Monkey Republic: https://lucasacademy.org/monkey