Reasoning in the classroom

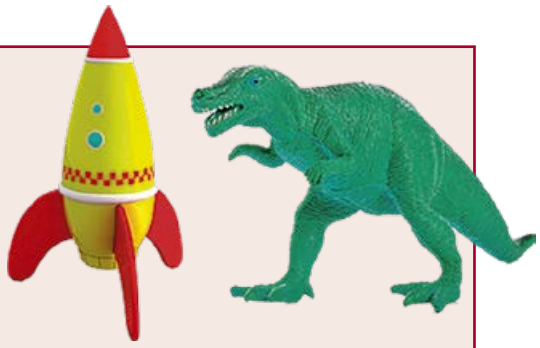
Buying toys

Support materials for teachers

Year 5

Llywodraeth Cymru
Welsh Government

Year 5 Reasoning in the classroom – Buying toys



These Year 5 activities start with an item that was included in the 2014 National Numeracy Tests (Reasoning). They continue with an activity that is linked and requires learners to compare the real costs of buying goods today against costs in 1986.

Activity 1

Buying toys

Learners use logic to work out the price of an item.

Includes:

- Buying toys question
- Markscheme

Activity 2

What's the real cost?

Learners use published information to compare prices of goods bought in 1986 and now.

Includes:

- Explain and question – instructions for teachers
- Whiteboard – 1980s computer
- Whiteboard – How does it compare?

Reasoning skills required

Identify	Communicate	Review
Learners choose their methods and, in Activity 2, the topic they research.	They present their findings to other groups.	They check their own work.

Procedural skills

- **Combinations**
- **Money (addition, subtraction)**

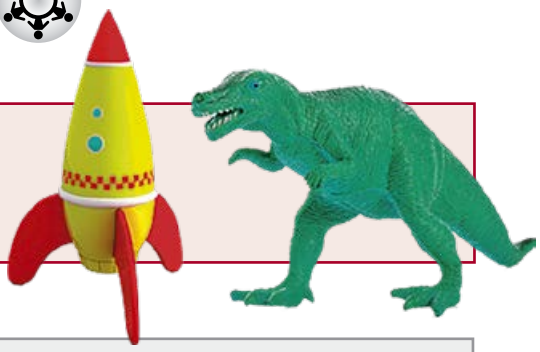
Numerical language

- **Cost**
- **Buying**
- **Compare**
- **Average**
- **Hourly rate of pay**

Activity 1

Buying toys

Activity 1 – Buying toys



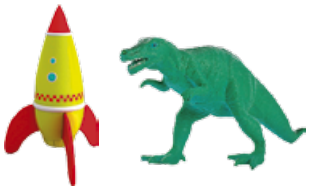
Outline

In this short Year 5 activity, learners use logic to solve a problem.

You will need

Buying toys question
One page for each learner

Markscheme



total cost **80p**

total cost **£1**

How much does  cost?

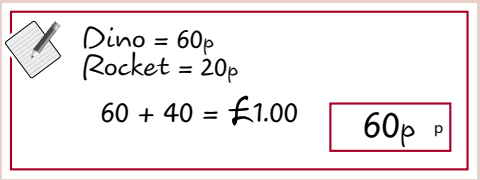
p

2m

Activity 1 – Buying toys – Markscheme and exemplars

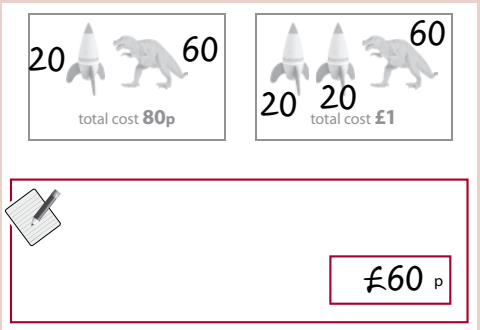
Marks	Answer
2m	**60**p
Or 1m	Clearly links a rocket to 20

◄ **Cost of one rocket**



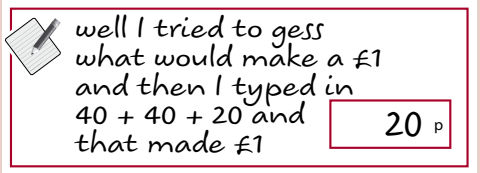
Correct; **2 marks**

- The duplication of p in the answer box can be ignored.



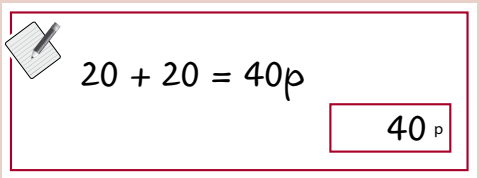
Links 20 to a rocket; **1 mark**

- £60 is incorrect. However, the numbers by the images link the rocket to 20



Incorrect; **0 marks**

- Although this learner shows the value 20 it is not linked to a rocket (the rocket cost appears to be 40p, the dinosaur 20p).



Incorrect; **0 marks**

- Although there are two 20's, this is not enough to be sure that the value links to a rocket so no credit can be given.

Activity 2

What's the real cost?

Activity 2 – What's the real cost?

Outline

In this Year 5 activity, learners compare the costs of buying goods in 1986 and the present day. They undertake their own research on products then compare costs in relation to how much people earn, on average. They present their findings and conclusions, then continue their research through exploring the relative costs of other goods, such as toys, food or cars.

Activity 2 – What's the real cost? is deliberately loosely structured to allow learners to make their own decisions and undertake their own research.

The activity could readily sit within a broader project relating to social history or technology. It could be extended by learners 'interviewing' their parents/carers/family/older friends about their first experience with computers, or their memories of toys and games from their own childhoods, then writing a report.

You will need

WB **Whiteboard – 1980s computer**

WB **Whiteboard – How does it compare?**

Groups of learners will also need access to the web and
(optional) **catalogues showing current game consoles and their prices**

Activity 2 – What's the real cost?

Explain

Ask learners how long they think people have had computers in their homes or at school. Show **1980s computer** on the whiteboard. In the 1980s computers like this were solely for games and were regarded as very exciting. By today's standards, however, the games were very boring *(describe the game 'Pong' if you remember it! It was excessively slow and unexciting)*. A computer like this one cost around £150.

Today, there are many games consoles to choose from with a wide span of prices. But how do those prices compare in real terms with the ones in the 1980s when the average person earned much less than they do today? Show **How does it compare?** on the whiteboard. The data *(rounded to ensure learner accessibility)* shows the average hourly rate of pay in the UK in 1986, and the average rate now *(using the latest data available at the time of publication)*.

Their task is to use the information they have been given to work out which is more expensive in terms of the impact on earnings for the average person – buying a computer then, or now. They will need to research *(online or using catalogues)* the current cost of games consoles, and decide which one makes the best comparison *(the 1986 computer was very limited in terms of games, so the contemporary console they choose should be at the lower/lowest end of the technological spectrum.)* Ask them to record their work and their conclusions so they can present it to other groups.

Support the process, using the questions below. Groups present their findings, explaining what modern games console they chose and why, and then the comparison in prices in real terms. Then, if time permits, ask them to repeat this research *(using the web)* focusing on other goods such as toys, food or cars. *(A copy of a 1986 store catalogue can be found on www.flickr.com/photos/lavalampmuseum/3590239841/in/set-72157619081815831/)*

Question

- When you are comparing prices, why does it matter what people earned? *(Because the real cost to the person is how much of their income the item costs)*
- What does 'average' mean? Why do we use average when we talk about how much people earn? Does the average figure mean that everyone gets paid that amount?
- In the hourly rates of pay given on the whiteboard, it says 'about xxx'. The actual amounts have been rounded to make it easier to work with. Does that matter for this task? Why/why not? *(As both have been rounded, and we are comparing them, we can work with approximations rather than exact figures.)*
- What games console are you going to use to compare prices? Would you choose an expensive one? Why/why not? *(To make the comparison fair, you need to choose the console that is most like the 1980s one – so, the lowest technological one there is.)*
- How are you going to use the information you have to work out the costs in real terms? *(For example, how many hours' work it would take to pay for the computer in 1986, then and now)*
- How are you going to present your work so someone else can understand it?
- What are you going to choose to investigate now? Why? What is your starting point?

WB

£150

WB

Average earnings for one hour's work

1986
About £4.00

Now
About £13.00