



Euse your brain: Challenge your talent for Science

OUTPUT 5

STEM ERASMUS +

Euse your brain: Challenge your talent for
Science

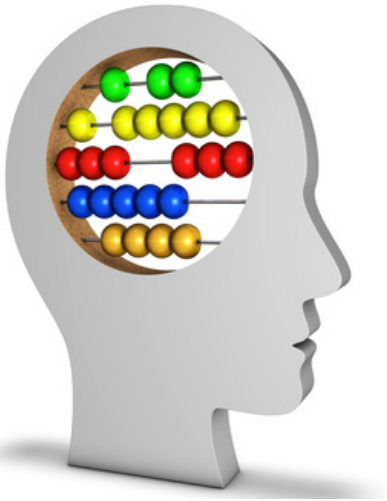


INTRODUCTION

Maths students of each country, together with their teachers, have developed fun exercises for primary school pupils to introduce them into the interesting challenges that Maths has to offer. The different exercises have been collected in a brochure that can be made available to primary schools to increase the early learners' motivation. The exercises are written in an English that should be understood by the young children of all countries. A digital version was uploaded to the project website.

„Corner calculation“

A funny game for Maths classes!



Age: 6-16

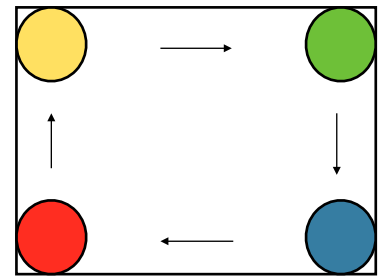
Time: around 5-10 minutes for each round

With this game, you can learn to calculate in your head quicker and we play it often in Maths lessons in Germany!

You can even have tournaments with several rounds!

The rules are simple:

1. Four pupils go to the four corners of the classroom.
2. One good Maths pupil or the teacher calls out calculations, like „three times twelve“.
The questions can be adapted to the current topic of your lessons!
3. The pupil who calls out the correct answer first moves one corner ahead.
4. The first pupil to achieve a home run (all four corners) is the winner!



Have fun!!!

ALGEBRAIC TANGRAM

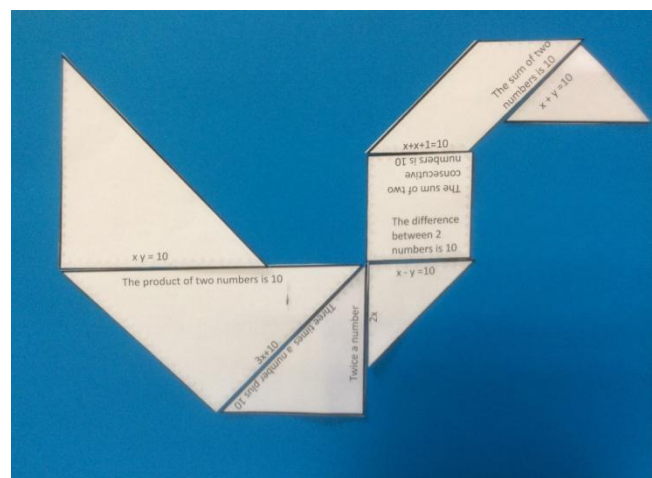
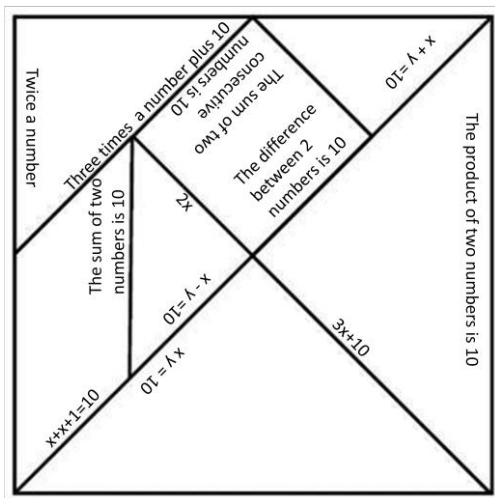
Age: 12-14 years.

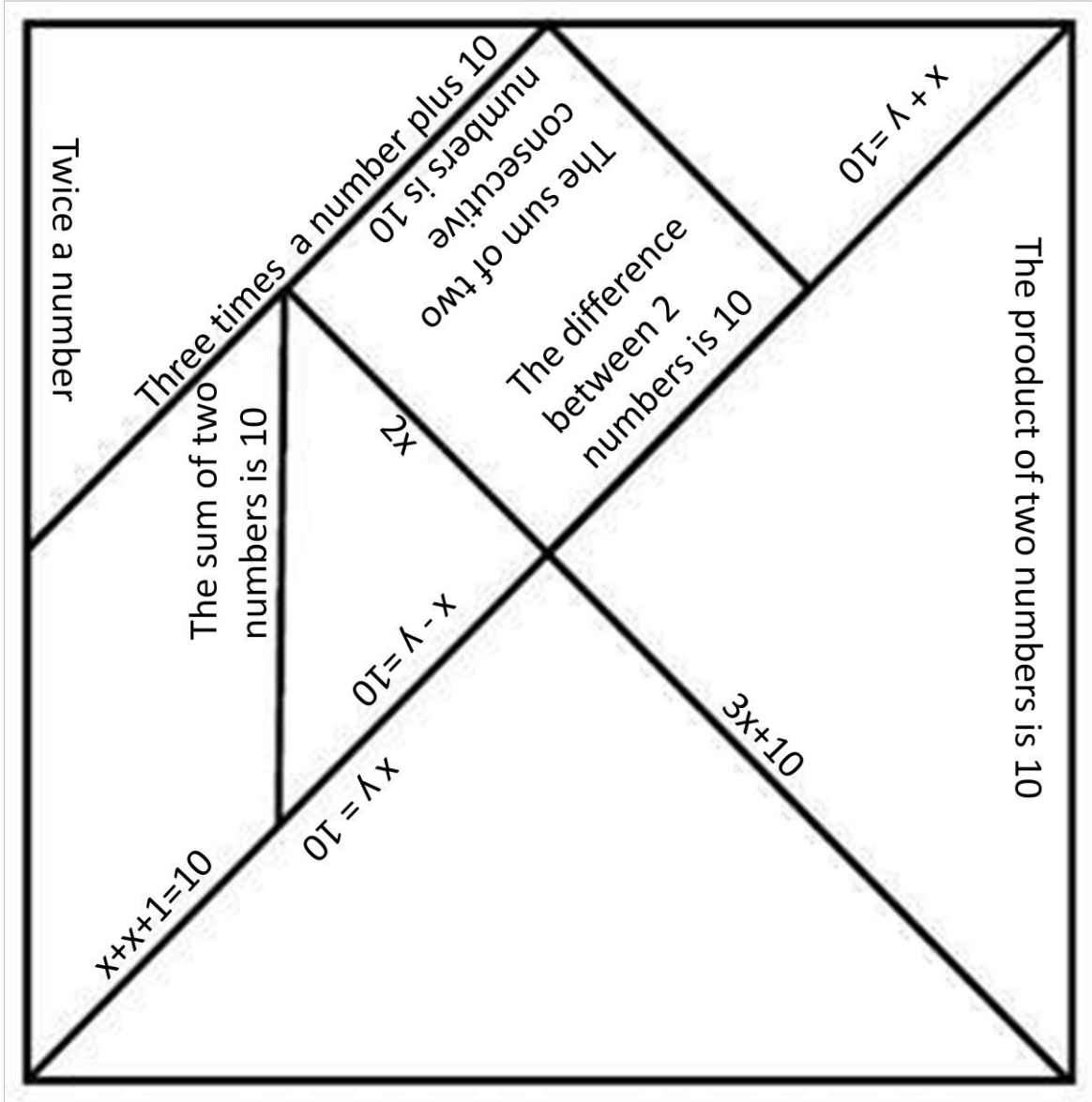
Time: 1 lesson (50 min)

The **tangram** is a dissection puzzle consisting of seven flat shapes, called *tans*, which are put together to form shapes. The **objective** of the puzzle is to form a specific shape (given only an outline or silhouette) using all seven pieces, which may not overlap.

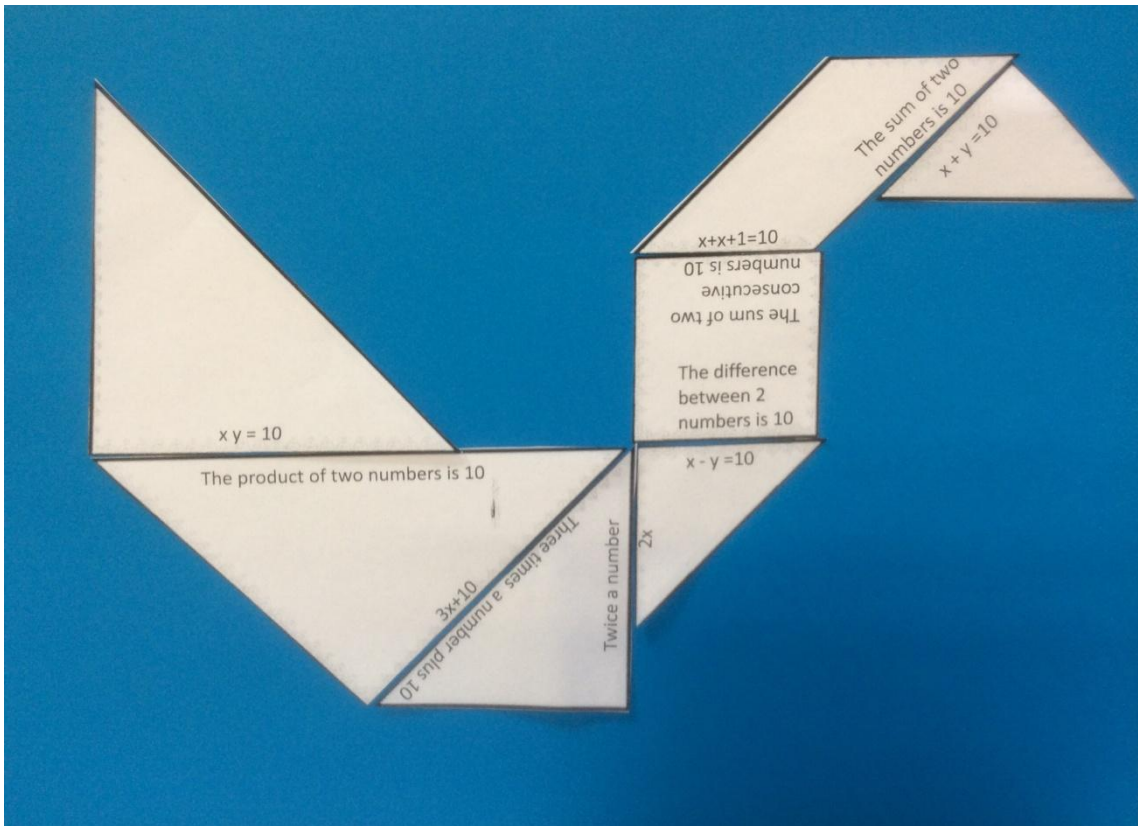
In our case, instead of giving an outline or silhouette, we will give the students **clues so they can form the shape**. They have to **join the sides that mean the same algebraically speaking**.

It's a funny way to work algebraic language.



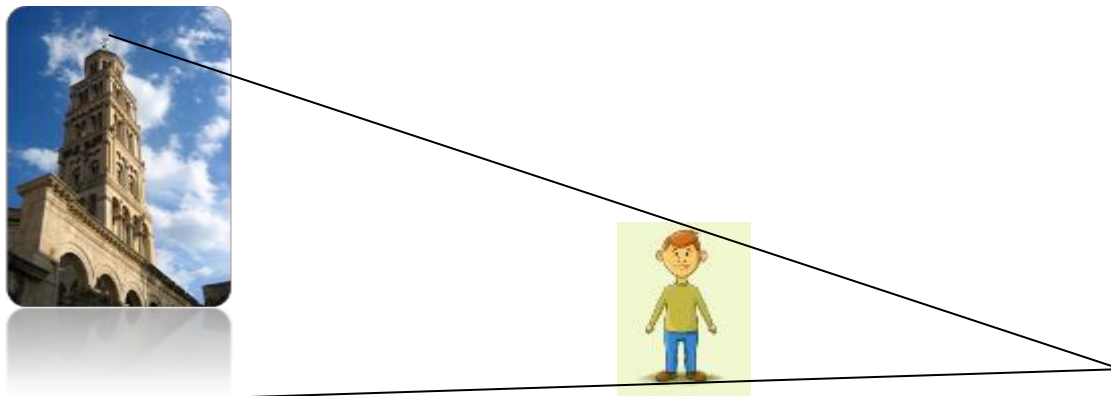


The result is something like this:



Mathematics

1. What is the height of bell St. Duje's bell tower if the height of the boy is 1.5m, and height of the boy and of the bell tower are in the measure of 1:40?



2. A ship in three hours travels 80.5 nautical miles. How much is that in km, if 20 nautic miles is as equal as 37 km?



3. Calculate how much Split average annual number of hours of sunshine if this number $3^3 \cdot 10^2$!

4. If you try and solve the equation you will receive year of establishment of the most popular sports club in Split football club Hajduk, which was founded in the early 20th century in Prague. If you take away 11 from one number, and then you divide it by 2 and add a third of the required number, You'll get number 1587. (x- Established Hajduk)



5.



**Walk
around the Diocletian's Palace**

Diocletian's Palace is an ancient palace built by the Roman emperor Diocletian at the beginning of the 4th century AD, that forms about half of the old town of Split.

The ground plan of the palace is almost rectangular shape approximately 160 meters x 190 meters. It has four gates: Golden gate (Northern wall), Silver gate (Eastern wall), Bronze gate (Southern wall) and Iron gate (West wall).

5. Pedestrian's walking speed is 50 meters per minute. If he starts his tour around the palace from Golden gate at 12:15, what time will it be when he gets back to the Golden gate?

TRUE OR FALSE



Write three questions on the board. Some of the questions are true and some are false.

All pupils have been given a red, green and white card.

If the pupil thinks it's true, they reach the green card into the air. If they believe it's false they will reach the red card into the air, and if they don't know they will put the white card in the air.

During the competition, the pupils have to write down their results in a schedule. (look at the example below)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-------|---|---|---|---|---|---|---|---|---|----|
| Green | | | | | | | | | | |
| White | | | | | | | | | | |
| Red | | | | | | | | | | |

The pupil with the most correct amount of answers will be named the winner.

$$x=1$$

$$7x + 3 - 10 = 0$$

$$4x + 3(x+2) = 17 - 4x$$

$$6x - 18 = 3x - 15$$

Math project

Introduction

The metric system is a system of measuring that people use worldwide. It is important in science that everybody knows what you mean if "a distance between 2 places is 6,2 km" or "the concentration of the medicine is 5 mg per mL".

In this exercise you learn more about the metric system and how to calculate with it.

Information

When you work with the metric system, you can measure length, mass, volume, etc. We call this the **base quantities**. Each base quantity has its **base unit** (or **SI unit**).

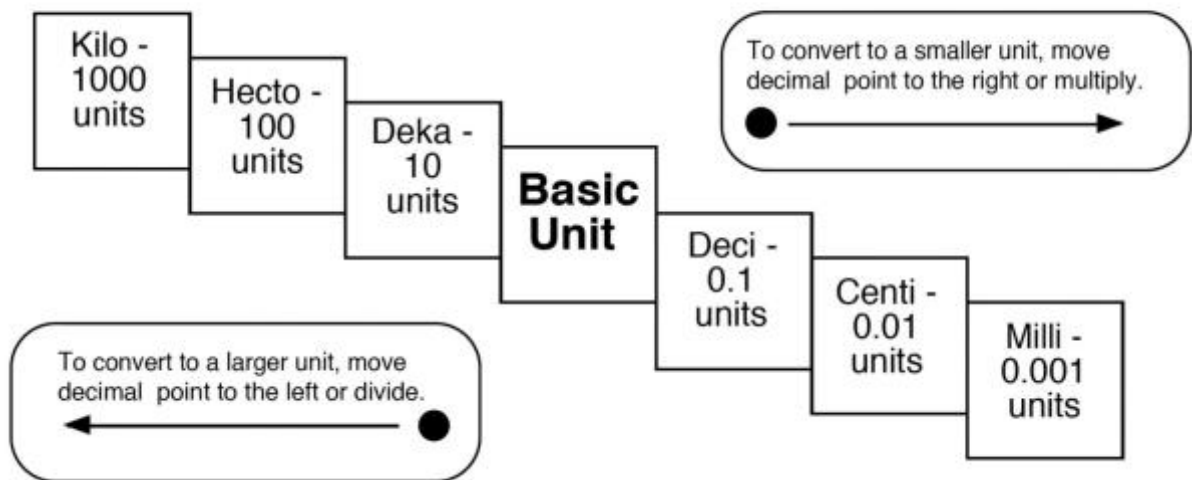
| Base quantity | Base unit | Symbol |
|-----------------|---------------------|--------------------|
| Length (l) | Metre | m |
| Mass (m) | Gram | g |
| Volume (V) | Liter / cubic metre | L / m ³ |
| Time (t) | Seconds | s |
| Temperature (T) | Celsius | °C |

METRIC SYSTEM

| Prefix | Multiple |
|--------|----------------|
| Kilo- | 1000 |
| Hecto- | 100 |
| Deka- | 10 |
| Unit | 1 |
| Deci- | .1 or 1/10 |
| Centi- | .01 or 1/100 |
| Milli- | .001 or 1/1000 |

Math project

Metric Conversion Chart



There are sites on the Internet that give a good explanation of the metric system:

1. <https://www.youtube.com/watch?v=KqVQxPRobgw>
2. <https://www.youtube.com/watch?v=7bUVjJWA6Vw>
3. <https://www.mathsisfun.com/measure/metric-system.html>
4. <https://www.khanacademy.org/math/cc-fifth-grade-math/cc-5th-measurement-topic/cc-5th-unit-conversion/a/metric-units-of-length-review>

Exercises

In the link below you find an exercise made in Bookwidget. If you click on the link you can make the exercise with questions about the metric system.

https://www.bookwidgets.com/play/4CL3AA?teacher_id=5379373574127616

Good luck !!!