How much will the school trip cost?

Primary: (ages 7 – 11)	**Mathematics**

Students work together in groups to think of an interesting and unusual school trip and calculate how much it would cost. They use a laptop to look up prices and a work sheet with a number of questions as a guideline. Besides this, they are free to approach the assignment however they wish. The main purpose is to focus on the process of working together, generating ideas, and developing an understanding of the value of money

Time allocation	1 lesson period (but could be extended to 2 lesson periods)
Subject content	Calculating costs for trip as a whole and per student (addition and division) Building awareness of money and costs
Creative and critical thinking	This unit has a **creativity** and **critical thinking** focus: • Envision how to meaningfully solve a maths problem • Consider different perspectives and question your own assumptions, • Explain strengths and limitations of proposals and reflect on chosen approach relative to alternatives
Other skills	Communication, Collaboration
Key words	trip; transportation; cost; price; pitch; student voice; addition; division; money;

Products and processes to assess

Students work together in groups to propose and cost a school trip. At the highest levels of achievement, in addition to producing accurate calculations, they also come up with imaginative ideas for their school trip and are able to present a specific position on the benefits of such a trip. They review alternatives and justify their own position with good evidence, whilst acknowledging its strengths and limitations. They are open to the ideas, critiques of feedback of others, consider different perspectives, and show a good awareness of why final choices have been made.

Teaching and Learning plan

This plan suggests potential steps for implementing the activity. Teachers can introduce as many modifications as they see fit to adapt the activity to their teaching context.

Step	Duration	Teacher and student roles	Subject content	Creativity and critical thinking
1	Lesson period 1	Students form groups of 3 and think of ideas for a really unusual and interesting school trip and calculate how much this school trip will cost (both in total and per person). It is important that the school trip is affordable. For this purpose, they receive a work sheet which has questions which can assist them with this process. Students can look up information on the computer about the costs that are involved for each part of the proposed school trip. The teacher can discuss the conditions that will enable them to work well together: listen to each other, let each other have a chance to finish talking, be open to the ideas of others, and make sure that everyone has something to contribute. This activity stimulates an open learning process. The answer (how much does the school trip cost) is not the goal but the means to enable pupils to calculate with money, and to think about the value of money. The end goal and the boundary conditions (an affordable school trip) form the departure point and give direction.	Calculating and examining costs for trip as a whole and per student Working well together to pool their knowledge of mathematics Developing awareness of money	Generating and playing with unusual and radical ideas for school trips Making connections between school trips, cost, price, money and maths Envision how to solve meaningfully a maths problem (how much will the trip cost?)
2	If the students are asked to pitch their ideas, a second lesson period will be required	The students work together on the assignment in groups. For this they may use laptops/computers to search for information. The teacher walks around to take notes for assessment and support as necessary. The goal is that students practise divergent and convergent thinking: they come up with many different ideas and are able to combine the ideas into a new, affordable idea for a school trip. One possible pathway for this activity is that each group can be asked to pitch their idea for the trip and the cost to the other students. The teacher can then facilitate a discussion about the strengths and limitations of each proposal according to different criteria (e.g. cheapest, most unusual, most fun, most educational).	As in step 1	Proposing how to solve meaningfully a maths problem in a personally novel way Considering several perspectives on approaching a maths problem and justifying their own approach Explaining strengths and limitations of ideas on the basis of different criteria
3		The children fill in a questionnaire with questions about the process (self-evaluation). The process and the results are discussed in the class. What went well, what went less well? When you looked at the costs of a school trip: what surprised you the most?	Building awareness of money and costs	Reflecting on steps taken to pose a maths problem and chosen solution relative to possible alternatives Identifying and questioning own assumptions about costs

Resources and examples for inspiration

Web and print

- Work sheet to note down information

Other

- Laptops/computers to look up information

Opportunities to adapt, extend, and enrich

- Another activity that helps students to learn about money is *The great cookie bake* from this same series of OECD CERI activities from the *Fostering and assessing creativity and critical thinking skills* project

Creativity and critical thinking rubric for mathematics	•Mapping of the different steps of the lesson plan against the OECD rubric to identify the creative and/or critical thinking skills the different parts of the lesson aim to develop

	CREATIVITY Coming up with new ideas and solutions	Steps	CRITICAL THINKING Questioning and evaluating ideas and solutions	Steps
INQUIRING	Make connections to other maths concepts or to ideas from other disciplines	1	Identify and question assumptions and generally accepted ways to pose or solve a maths problem	3
IMAGINING	Generate and play with several approaches to pose or solve a maths problem	1	Consider several perspectives on approaching a maths problem	2
DOING	Pose and envision how to solve meaningfully a maths problem in a personally novel way	1,2	Explain both strengths and limitations of different ways of posing or solving a math problem based on logical and possibly other criteria	2,3
REFLECTING	Reflect on steps taken to pose and solve a maths problem	3	Reflect on the chosen maths approach and solution relative to possible alternatives	3

APPENDIX 1

How much does a school trip cost?

Goal: calculate how much your proposed school trip for our class will cost (in total and per person)

This year you can organise a school trip yourselves!

First think of some really unusual and interesting school trips and note them down.

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……..

Then choose an idea together with the group. Where will we go and what will we do?

……..

What is required and how much does it cost?

Required	**Total costs**	**Costs per child**

How much will the school trip cost in total?

……

And per child?

……

Is this a realistic school trip? Why / Why not?

When you are finished, fill in the questionnaire. Circle the correct answer.

Evaluation questions for pupils **I found it a pity that my ideas were not sufficiently used in the group.**	**No**	**A little**	**Pretty much**	**Certainly!**
I found my own ideas the best.	**No**	**A little**	**Pretty much**	**Certainly!**
I found it easy to listen in a relaxed manner to the ideas of others, without feeling the need to immediately say something myself.	**No**	**A little**	**Pretty much**	**Certainly!**
I found it difficult to arrive at a result together.	**No**	**A little**	**Pretty much**	**Certainly!**
The ideas of others brought me further ideas myself.	**No**	**A little**	**Pretty much**	**Certainly!**
I became inspired by the ideas of others.	**No**	**A little**	**Pretty much**	**Certainly!**
I became very enthusiastic about working together with other children.	**No**	**A little**	**Pretty much**	**Certainly!**
I found it enjoyable to ensure that our ideas were combined into one plan.	**No**	**A little**	**Pretty much**	**Certainly!**