

LEARNING EVALUATION SITUATION (LES)

Cycle 3 – Primary Education



leucan 

« Join in and roll your coins! »

Teacher's Guide

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This Learning Situation was created based on
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DESCRIPTION OF THE LEARNING SITUATION

Educational Intent

The video “My Friend Needs My Help...” will help students grow aware of a subject that is still taboo in our schools today: cancer. In a spirit of cooperation and solidarity, students will organize a fundraiser for Leucan: the money box campaign.

Students will develop their sense of cooperation by orchestrating a fundraising campaign in their school. Moreover, they will demonstrate their ability in mathematical problem-solving situations by taking charge of the various steps of solicitation for a non-profit organization.

General Learning Subjects

Educational intent: **Living together and citizenship**

Growth axis: Personal involvement in a spirit of cooperation and solidarity.

Principles; rules and strategies for teamwork; decision making process (consensus, compromise, etc); relationships based on equality; the art of debate and argumentation; leadership; peer-to-peer working; action projects focused on living together.

Cross-curricular Competencies (CC)

Cooperation:

- Contribute to the collective work: Participate actively in school and in class activities in the spirit of collaboration. Plan and perform work with others. Perform the task according to the rules established by the group.
- Make the most of cooperative work. Recognize tasks that can be accomplished more effectively within a group. Appreciate one’s work and that of peers thanks to teamwork. Identify elements which facilitate or hinder cooperation. Define the improvements to make for the next collaborative work.

Disciplinary Competencies (DC)

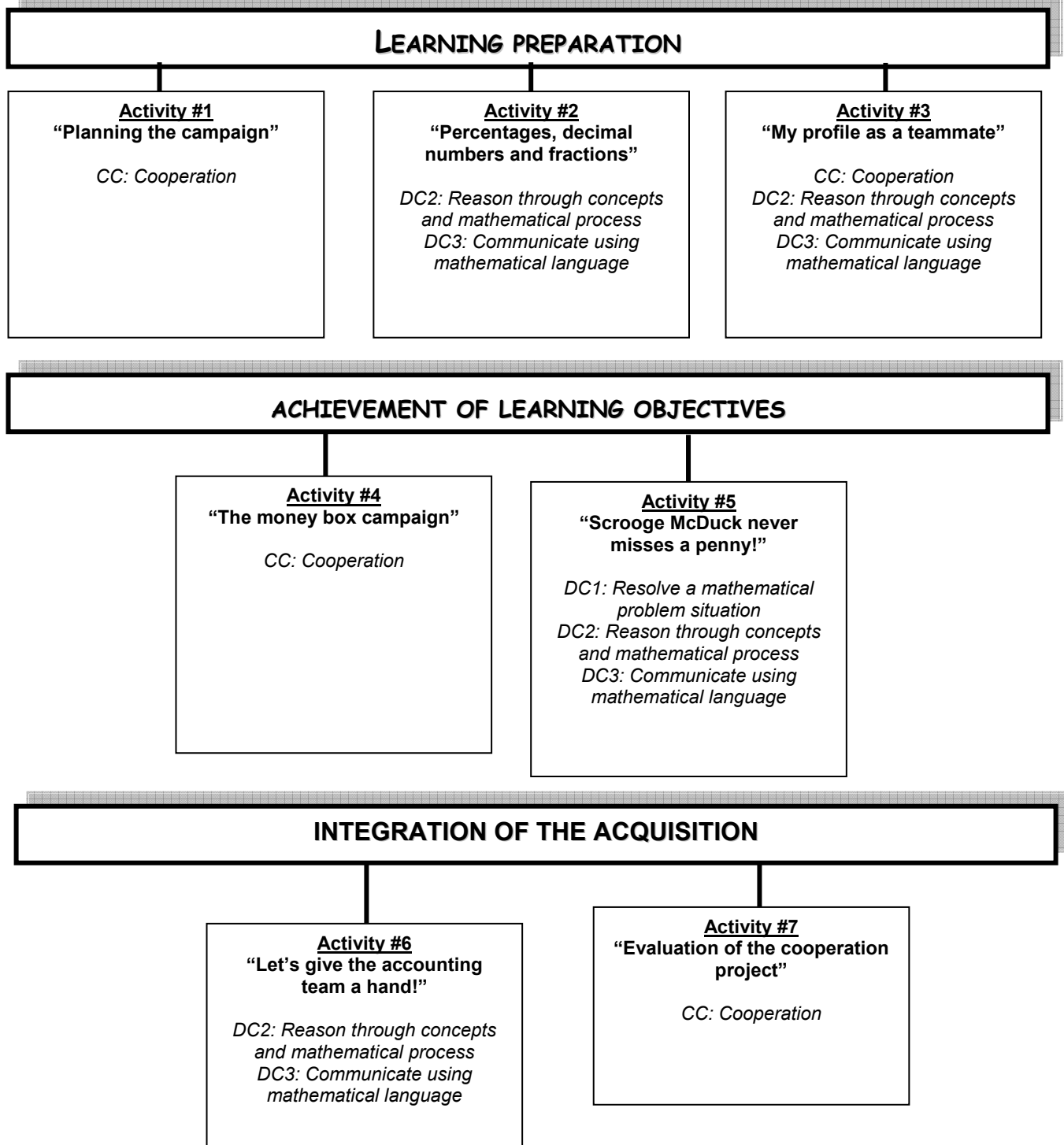
Mathematics, sciences and technologies:

C1 Resolve a problem situation

C2 Reason through concepts and mathematical process

C3 Communicate using the mathematical language

STRUCTURE OF THE LEARNING SITUATION



LEARNING PLANNING

Targeted Competence: Cooperation

| Internal resources regarding essential skills KNOWLEDGE, KNOW-HOW AND SKILLS | |
|--|--|
| KNOWLEDGE | |
| <ul style="list-style-type: none"> • Be assertive while respecting others • Adapt to the situation: come to a consensus • Recognize the contribution of others • Combine everyone's strengths | |
| KNOW-HOW | |
| <ul style="list-style-type: none"> • Approach different contexts with an open-mind • Contribute to teamwork • Plan and perform work in collaboration with others • Discuss with group and focus action to reach a common objective • Capitalize on teamwork | |
| SKILLS | |
| <ul style="list-style-type: none"> • Organization skills | |
| External resources INSTRUCTIONAL MATERIAL | |
| <ul style="list-style-type: none"> • "My Friend Needs My Help..." video • Paper board, markers | <ul style="list-style-type: none"> • Leucan's money boxes and promotional posters • Student's Notebook |

Targeted Competencies:

C1 Resolve a problem situation

C2 Reason through concepts and mathematical process

C3 Communicate using the mathematical language

| Internal resources regarding essential skills KNOWLEDGE, KNOW-HOW AND SKILLS | |
|---|--|
| KNOWLEDGE | |
| <ul style="list-style-type: none"> • Arithmetic: meaning and writing of numbers <ul style="list-style-type: none"> ▪ Natural numbers below 1,000,000 (one hundred thousands) ▪ Decimal numbers up to the hundredths ▪ Fractions ▪ Percentages ▪ Transfer from one written form to another: decimals, percentages ▪ Choose a written form depending on context • Arithmetic: meaning of operations on numbers | |

- Operations on decimal numbers: addition, subtraction, multiplication and division
- Operations on fractions (with the help of concrete material and patterns): addition, subtraction and multiplication with a natural number
- Arithmetic: operations on numbers
 - Written calculations (decimal numbers): addition, subtraction, multiplication where the result does not surpass the hundredths
 - With the help of concrete material and patterns, multiplication of natural numbers by fractions

KNOW-HOW

- Model the problem situation by making use of appropriate concepts and mathematical processes
- Apply different strategies in order to elaborate a solution
- Validate the solution
- Share information about the solution using mathematical language
- Identify the elements of the mathematical situation
- Draw upon concepts and mathematical processes appropriate to the situation
- Apply mathematical processes appropriate to the situation
- Establish links between mathematical language and everyday language
- Interpret and produce mathematical-oriented messages

SKILLS

- Learn to be rigorous

External resources
INSTRUCTIONAL MATERIAL

| | |
|--------------|--------------------|
| Money raised | Student's Notebook |
|--------------|--------------------|

EVALUATION PLANNING

Targeted competency: Cooperation

| CRITERIA PFEQ | INDICATORS (OBSERVABLE MANIFESTATIONS) The student... | STUDENT'S NOTEBOOK |
|--|---|--------------------|
| Customized attitudes and conduct | Adopts the necessary behaviours and attitudes to reach a consensus. | Page 7 |
| Commitment to the completion of group work | Performs the duties assigned in a spirit of mutual assistance. | Pages 6, 7 and 15 |
| Contributes to the improvement of the conditions of group work | Accurately assess his contribution to the cooperation project. | page 15 |
| Success criteria: Student adopts a role within a team according to his teammate profile. He/she performs tasks included in his/her role, and in accordance with the established deadlines. He/she thinks back on his/her participation and suggests improvements that contribute to the appropriate conduct of the team. | | |
| The student's participation tool: Self-evaluation of the cooperation work (page 15) | | |
| The teacher's evaluation tool: Assessment grid with a three-level scale and observations | | |

Targeted competencies:

C1 Resolve a problem situation

C2 Reason through concepts and mathematical process

C3 Communicate using the mathematical language

| PFEQ CRITERIA | INDICATORS (OBSERVABLE MANIFESTATIONS) The student... | STUDENT'S NOTEBOOK |
|---|--|--------------------------------|
| C2 - Proper analysis of a situation of application | Represents percentages and equivalent expressions of the decimal numbers in an appropriate manner. | pages 3, 4, 8, 9, 10, 11 |
| C2 - Choice of concepts and mathematical processes appropriate to the situation of application | | |
| C2 - Proper application of selected process | | |
| C1 - Production of a accurate solution: process and outcome | Adopts a rigorous approach. | pages 8, 9, 10, 11, 12 |
| | Proposes an appropriate solution. | |
| C1 - Explanation of the relevant elements of the solution | Carefully evaluates approach to validate it. | pages 3, 4, 8, 9, 10, 11 et 12 |
| C3 - Proper interpretation of a spoken or written message using mathematical language | | |
| C3 - Production of a proper spoken or written message using mathematical language | Communicates results clearly using mathematical language. | pages 3, 4, 8, 9, 10, 11 |
| <p>Success criteria: In the context of the Leucan's money box campaign, students calculate the funds raised by students in their group and their school by drawing upon different mathematical resources appropriate to the situation. He/she clearly explains his/her approach by using mathematical language.</p> | | |
| <p>The student's participation tool: Co-evaluation with the teacher (page 12)</p> | | |
| <p>The teacher's evaluation tool: Assessment grid with a four-level scale</p> | | |

DESCRIPTIVE ANALYTICAL GRID

TARGETED COMPETENCY: Cooperation

| INDICATORS | VERY GOOD The student... | GOOD The student... | NEEDS IMPROVEMENT The student... |
|--|---|---|--|
| Customized attitudes and conduct | Acquires leadership behaviours and attitudes. Speaks naturally and encourages others when they speak. Contributes to decision making in order to reach a consensus. | Acquires open-minded behaviours and a respectful attitude. Expresses his/her views while respecting others' right to speak and listens carefully to others. Participates in the decision-making process to reach a consensus. | Acquires closed-minded behaviours and attitudes. Hardly speaks or listens to others, but has a tendency to interrupt them or to lose their attention. Has difficulty making compromises in the decision-making process. |
| Commitment to complete the group work | Performs very effectively and rigorously the duties assigned within the given timeframe. Participates in activities by providing assistance to others. | Performs the duties assigned within the given timeframe. Participates in many activities without offering to help his friends. | Performs the duties assigned under someone else's insistence but only partially accomplishes them. Participates in activities in an individualistic manner and refuses help from his/her friends. |
| Contribution in improving the conditions of the group work | Identifies his/her strengths and difficulties and recognizes the difference between what was planned and carried out in practice. Provides relevant and possible improvements and accepts others' suggestions. Recognizes situations where cooperation is beneficial. | Identifies his/her strengths and difficulties and generally recognizes the difference between what was planned and carried out in practice. Suggests possible improvements but has difficulty accepting others' suggestions. Recognizes one situation where cooperation is beneficial | Unrealistically identifies strengths and difficulties as a team member as well as the gap between what had been planned and implemented in practice. Proposes irrelevant improvements and has difficulty accepting others' suggestions. Prefers to work alone in all situations. |

DESCRIPTIVE ANALYTICAL GRID

TARGETED COMPETENCIES: C1, C2, C3

| INDICATORS | VERY GOOD The student... | GOOD The student... | SOMEWHAT DIFFICULT The student... | VERY DIFFICULT The student... |
|---|--|---|--|---|
| Consistent representation of percentages and decimals | Represents the percentages with ease and uses equivalent expressions to represent the decimal numbers. | Represents most of the percentages and decimals in the standard way. | Awkwardly represents percentages and decimals. | Represents percentages and decimals in a confused manner |
| Accurate operations on decimals | Calculates various operations on percentages and decimals with no error. | Calculates various operations on percentages and decimals with one or two errors | Calculates various operations on percentages and decimals with few errors. | Calculates various operations on percentages and decimals with many errors. |
| Rigorous approach to resolution (calculations and charts) | Leaves structured traces for all steps of the process (calculations and charts). | Includes all stages of the process with some traces missing. | Presents an approach with incomplete steps and some traces missing. | Presents an approach with missing steps and many confusing or missing traces. |
| Appropriate solution | Proposes an appropriate three-step solution with no error. | Proposes an appropriate three-step solution with only some minor errors. | Proposes an appropriate two-step solution. | Proposes an appropriate one-step solution. |
| Accurate assessment | Carefully evaluates his/her approach to validate it. | Evaluates his/her approach and validates his/her solutions but sometimes forgets to take corrective action. | Evaluates his/her approach by validating only the steps undertaken in cooperation. | Partially evaluates his/her approach without validating the results. |
| Precision of the mathematical vocabulary | Communicates results using precise mathematical language and represents them in a variety of ways. | Communicates results using the appropriate mathematical vocabulary in each case. | Communicates results using the appropriate mathematical vocabulary in some cases. | Communicates results using everyday language. |

ACTION IN THE CLASSROOM

LEARNING PLANNING

Activity #1 – “Planning the campaign”

| | |
|---|---|
| Competence: CC8 - Cooperation | Objective: Identify the important steps to organize a fundraising campaign. |
| Duration: 60 minutes | Required material: “My Friend Needs My Help...” video, big paper board or acetate, marker, Student’s Notebook - page 2 |

Procedure:

The teacher presents the “My Friend Needs My Help...”.

Adapted in length and language for suitable use at the elementary level, this video raises awareness on the reality of cancer in children while explaining why students’ gesture of solidarity on Halloween is important.

- Questions on the disease: cancer
- Questions on how to remedy the situation: scientific research
- Questions on the research field

Subsequently the teacher informs students that they are invited to organize a fundraising campaign in their school to raise money for Leucan, a non-profit organization.

Participating in Leucan’s money box campaign is a simple way for schools to contribute to a collective project and to support cancer-stricken children in their region.

- Questions about the nature and goal of a fundraising campaign. Provide examples: Halloween money box campaign, etc.

Carried by students, teachers and volunteers, the Halloween money box campaign “My Friend Needs My Help...” is provincial fundraiser to which schools from all regions of Quebec are invited to participate. With the money raised, Leucan offices finance services in their respective regions, including school-life services.

- Questions about the nature and goal of a non-profit organization. Provide examples: Leucan, etc.

Founded in 1978, Leucan is a non-profit organization with a mission to promote wellness and recovery of cancer-stricken childrens and to provide support for their families. On top of its Montreal head office, Leucan is made of nine regional executive committees and a membership of over 7,000 across the province of Québec. For more information, please visit www.leucan.qc.ca.

Students write this information on the first page of their notebooks.

The teacher puts students in teams of four and each team share together what they know about the different steps of a fundraising campaign (see Appendix 1).

- How to proceed?
- Where will the money be raised?
- When (project’s date and timeline)?

The teacher distributes six strips of paper per team on which they write their ideas once they have reached a consensus. The teacher then continues the discussion by asking each team to name one step at a time to compare each step with that of other teams so the class can reach a consensus. On a large paper board or acetate, the teacher writes down the steps and deadlines of the class project. If needed, he/she adds his/her suggestions on the paper board/acetate if they are deemed valid by the students.

- Which steps are essential to complete the project?
- In which order should the steps be executed?
- Which qualities would be useful to complete each step?

The students write down the steps on pages 6 and 7 of their notebooks.

Activity #2 – “Percentages, decimal numbers and fractions”

| | |
|---|--|
| Competence: DC 2 - 3 | Objectives: Acquire the percentage concept: Go from one writing method to another: in decimals and in percentages. |
| Duration: three periods of at least 60 minutes | Required material: Student’s Notebook - pages 3 and 4 |

Procedure:

Through this two-step activity, students will acquire new knowledge and know-how. The teacher asks students how to calculate all the money raised and questions them on the mathematical concepts they need to know to complete this project.

1. Percentage

The teacher questions students about their prior knowledge:

- Have you ever heard of percentages? What is your daily use of percentages?
- What do percentages represent? Is there a word in the same word family that might help you understand the meaning of “percentage”?

The teacher explains more explicitly the notion of percentage is by validating prior knowledge of the students. He/she notes that a percentage is the equivalent of a fraction of 100 (reducible or not) and can also be expressed in decimals ($25\% = 25/100 = \frac{1}{4} = 0.25$). He/she moves on to the activity on page 3 so that students can familiarize themselves with the concept of fraction and practice going from one notation to the next.

2. Multiplication of a whole number by a fraction or a decimal number

The teacher proposes a first challenge to the students: How to calculate the fraction of a whole? For example, what is $\frac{1}{2}$ of \$40? The students work with their teams to figure out the best way to do this. Back with the whole group, some teams produce their solution on the blackboard and explain their approach. The teacher validates or rejects solutions and proposes helpful strategies.

The teacher proposes a second challenge to the students: How to quickly calculate the number of coins collected? He/she suggests multiplying, for example: 200 pieces of \$0.25. Students represent the solution with a mathematical equation ($200 \times \$0.25 = \50). Once all effective strategies are shared, students resolve a new problem. The teacher validates results to ensure the students

understanding. Then, he/she asks students to complete page 4 and have a teammate validate their work.

Activity #3 – “My profile as a teammate”

| | |
|--|---|
| Competence: CC8 - Cooperation DC2 | Objective: Discover the type of team to join. |
| Duration: 60 minutes | Required material: Appendix 3, Student’s Notebook - p. 5 |

Procedure:

The teacher demonstrates how useful profiles are when forming a team to organize a major project. He/she makes reference about multidisciplinary teams and expert groups so students can make a connection with everyday life. He/she explains a fundraising campaign is a major project, and teamwork is necessary to make use of each others’ talents and interests.

He/she then invites the students to complete the questionnaire on their personality. The teacher later explains the first column refers to Marketing; the second to Finance is the second and the third to Production. By counting the number of coloured squares in each column, students identify the team to which they should belong.

Applying new knowledge to mathematics:

To figure out the number of students wanting to be part of each team, students complete the calculations on page 5 of the Student’s Notebook. Finally, teachers form teams and distribute the tasks linked to each step of the project.

COMPLETION OF LEARNING

Activity #4 – “The money box campaign”

| | |
|---|---|
| Competence: CC8 - Cooperation | Objective: Complete a fundraiser at school |
| Duration: Variable | Required material: Student’s Notebook - pages 6 and 7, paper board or acetate from Activity #1, material as chosen by each team to organize the campaign |

Procedure:

Initially, students gather into teams. Taking into account the steps identified in Activity #1 and their individual profiles, students give themselves a role and link themselves to the completion steps on pages 6 and 7 of the Student’s Notebook.

Under the teacher’s supervision, students will carry out the campaign during the upcoming days/weeks.

Activity #5 – “Scrooge McDuck never misses a penny!”

| | |
|--|---|
| Competence: Mathematics: DC 1- 3 | Objective: Calculate the funds collected (by the student, the team, the class and the school) by adding and multiplying amounts. |
| Duration: 60 minutes or 2 30-minute periods | Required material: Money raised by each student, amount raised by level, Student’s Notebook - pages 8, 9, 10, 11 and 12 |

Procedure:

Each student brings the money he raised and counts it. He/she then calculates the amount raised by the team. He breaks down the amount by the total of each coin. He/she validates the total with another student from his/her core team who will review the traces of his/her calculations. Students then add up the amount raised by the entire class. Back with the group, some students explain the approach they used.

For the next steps, students complete the charts to illustrate their work. Back with the group, they try to figure out the amounts raised by each class of the school. Each team appoints a "secretary" who notes all the amounts in the chart; a "spokesperson" who advises the secretary of the amounts of the team; and an "accountant" who calculates the amounts raised by all the teams. The fourth student verifies the accuracy of all calculations. If a student believes he/she has found a calculation error, he corrects it on the blackboard. The results found will determine the amount of the cheque to be made to Leucan.

The teacher then proposes them to express in percentage or fraction the amount raised by each class in comparison with the amount raised by the entire school. They find a way of representing the funds raised by each class to communicate this information with the whole school.

Students then complete their co-evaluation, and the teacher comments the students’ assessment. If there is a gap between the teacher’s observations and the students’ assessment, it would be appropriate to schedule a meeting to explain this discrepancy.

INTEGRATION OF LEARNING

Activity #6 – “Let’s give the accounting team a hand!”

| | |
|--------------------------------|---|
| Competence: DC 2 - 3 | Objective: Solve problems through integration of new skills. |
| Duration: 45 minutes | Required material: Amount raised by the school, Student’s Notebook - pages 13 and 14 |

Procedures:

To ensure proper understanding of the concepts covered in the previous activities, students solve two problems by making use of the skills they have just acquired.

Now that the fundraiser was a success, the students have finished counting the money and know the amount raised. In the first problem (page 13) of the Student’s Notebook, students must distribute the amount collected by the students of the school according to given restrictions.

In the second problem (on page 14), they calculate the amount of donations made by two companies. Then they assess their validation process.

Activity #7 – “Evaluation of the cooperation project”

| | |
|---|---|
| Competence: CC8 - Cooperation | Objective: Review the fundraising campaign to evaluate cooperation |
| Duration: 60 minutes | Required material: Student’s Notebook - page 15 |

Procedure:

Initially, the student reviews the project and produces a final report he submits to other members of his team. Subsequently, students find a way to thank the various participants and communicate the results of the campaign to students, parents and the whole community. The teacher review the “fundraising campaign” and asks students what they feel is the best way to raise money. He/she directs them to Leucan’s website (www.leucan.qc.ca) where they can inquire about other activities to help this organization.

In light of the fundraiser’s results, students could take upon themselves to write an article for the school newspaper or a local newspaper.

Lastly, the student reviews the fundraising campaign in his notebook and his/her participation the class project (page 15).

APPENDIXES

Appendix 1

Holding a fundraiser to benefit Leucan

You want to organize an event to raise money for Leucan, which combines fun and the desire to help? No matter the size of your project, it is important to us. By getting involved, you contribute to the wellness and recovery of children with cancer.

Steps to follow

1. Set your objective.
2. Identify the steps, the deadlines and the required material.
3. Indicate the human resources required for each step (before, during and after Halloween day). Determine everyone's tasks. Identify all the classes in your school and students responsible for each. Involve all students in your class.
4. Establish how you will collect the money.
5. Determine how the funds will be calculated. The funds raised must be submitted to Leucan within the 45 days following the activity.
6. Once completed, it is important to thank all those who have encouraged you. Determine how to share the information with other participants.

Please note

- Visibility is key to your success. Promote your activity as soon as possible. Tell your friends. Leucan can provide promotional material for this purpose. We are here to support your campaign. You can discuss your project with the fundraising coordinator in your area: visit the **Contact** section of our website.
- The sale of **products bearing the likeness of Leucan** may be an interesting way to raise both awareness and funds for your event. Leucan can provide some, depending on availability.

Registration

<http://leucan.qc.ca/cms/assets/documents/Tirelires2009-documentation.pdf>

Good luck and thank you for making a difference for the children!

Appendix 2

<http://www.leucan.qc.ca/fr/activites/>

Appendix 3

Cooperation Work Cheat Sheet¹

- Decisions must be made in a democratic and cooperative manner: CONSENSUS must be encouraged, i.e. everyone's agreement is preferable to a decision by majority.
- Respect everyone's right to speak. Have the group discuss only one topic focussed on the project.
- Keep the schedule updated as it determines the tasks to be done. Cross out the completed steps on the schedule.

Communication within Cooperation Work Cheat Sheet²

| | |
|---|---|
| <ul style="list-style-type: none">• Red suggests anger (as in "to see red"), rage, and emotions. It illustrates an emotional point of view. | I like... I feel that... |
| <ul style="list-style-type: none">• Black is sombre and gloomy. It highlights the risks and weaknesses linked to an idea. | Yes, but... My main mistakes were... This is my criticism... |
| <ul style="list-style-type: none">• Yellow is joyful, positive and optimistic. It states hope and benefits. | It's great when... This was a real success... I suggest this positive activity... |
| <ul style="list-style-type: none">• Green represents grass, vegetation and fertility. It illustrates creativity and neutral ideas. | We could change... What if we tried... I suppose... |

1 and 2 Loose adaptation from Conseil de la coopération du Québec (2008): *Ensemble vers la réussite : démarche d'initiation à l'entrepreneuriat coopératif*

LES, 3rd cycle, My friend needs my help... Leucan and Université de Montréal, 2009, Teacher's Guide.