centre de développement pédagogique
pour la formation générale en science et technologie

Housing in the 1500s

GUIDE

CYCLE 2 OF ELEMENTARY

Spring 2013

Thanks to :

For testing the task:

- Julie Chabbert, teacher, and Marie-Claude Girard, pedagogical counselor, école Marie-Favery, Commission scolaire de Montréal
- Marie-Claude Bélanger, teacher, école des Merisiers, and Isabelle Beaulieu, pedagogical counselor, Commission scolaire des Phares

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For the photos

- Forest in winter and in summer: Brigitte Loiselle

For linguistic review, in French:

- Lucie Brouillette

For English translation :

- Christine Tansey

Note:

- For the purposes of brevity, the masculine form has been used.

A quick glance at *Housing in the 1500s*

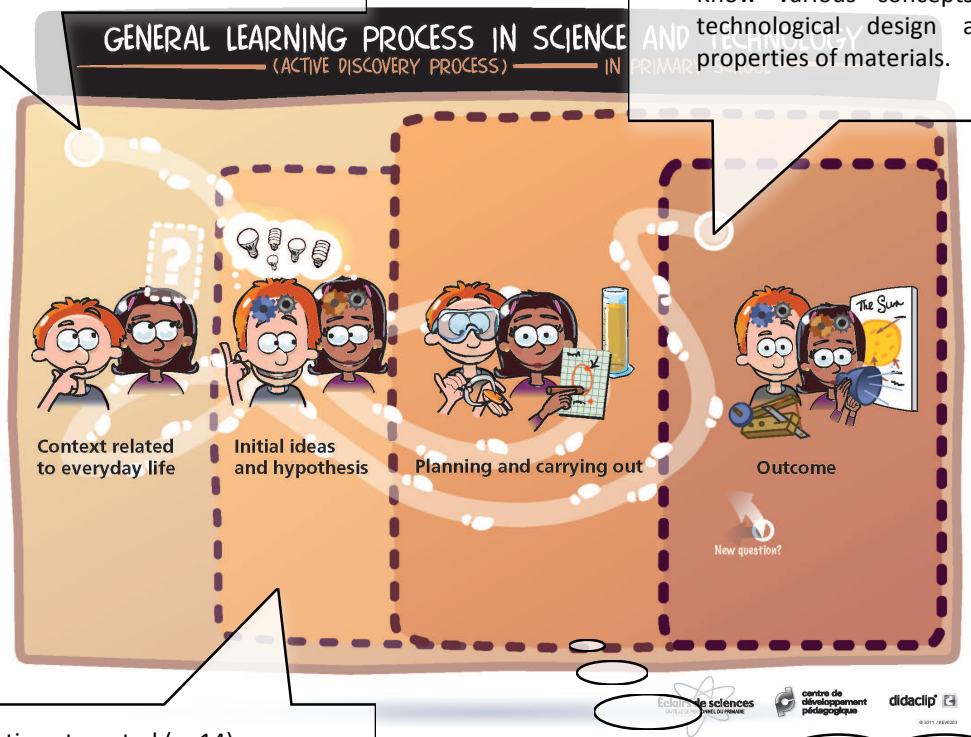
This LES was designed to support cycle 2 teachers in the appropriation of the general learning process in science and technology in elementary school. This appropriation will occur while the task is carried out with the students. It also allows the acquisition of concepts (or the reinvestment of the concepts) from geography, history and citizenship education in science and technology. The theme enables learning about certain concepts from the *Progression of Learning* concerning the construction of a shelter to be broached within the framework of a complex task where the student will have to carry out a technological design.

Complex task suggested to the students

Using technological design, discover what a challenge it was to build a shelter for nomadic and sedentary people in the 1500s.

Main targeted learning (p. 4 to 7)

- Become familiar with the process or carry out certain elements of the process relatively autonomously.
- Initiation to the adequate use of simple tools.
- Start learning about planning materials.
- Know various concepts related to technological design and to the properties of materials.



Misconceptions targeted (p. 14)

- Confusion between the materials and the structure when the student chooses the simulation materials.

In a learning activity:

- Use of the hand saw and miter box

Housing in the 1500s
Science and technology – Cycle 2
Overview

Pedagogical aims

This learning situation allows the student to:

- Experience the general learning process in science and technology in the cycle 2 of elementary school relatively autonomously
- Learn to organise and manage materials
- Become familiar with the use of simple tools (fine motor skills)
- Highlight strategies specific to science and technology

Proposed context

The student's challenge will be to design a prototype of a shelter based on constraints similar to those an inhabitant in North America in the 1500s would have had to face.

Broad area of learning

Health and Well-Being

- Awareness of his/her basic needs: physical needs, need for safety. This LES sensitises the student to the importance of having an adequate home, protected from the cold and the elements.

Competencies

- To propose explanations for or solutions to scientific or technological problems
- To make the most of scientific and technological tools, objects and procedures
- To communicate in the languages used in science and technology

Statements from the *Progression of Learning*

As a complement to the statements below, a lexicon and complementary references have been added on pages 6 and 7.

Legend:

✶: Worked on during the LES
↻: Previous cycle(s)
+: Optional

Material world

✶ A.1.e. Describes the shape, colour and texture of an object or a substance
\+ B.3.a. Describes situations in which human beings consume energy (e.g. heating, transportation, food consumption, recreation)
\+ B.3.c. Explains the insulating properties of various substances (e.g. polystyrene, mineral wool, straw)
↻ D.1.b Identifies the needs that an object was originally designed to meet
✶ E.4.d. Draws and cuts parts out of various materials using appropriate tools
✶ E.4.e. Uses appropriate assembling methods (e.g. screws, glue, nails, tacks, nuts)
✶ E.4.f. Uses appropriate tools for proper finishing work
✶ F.1.b. Distinguishes between the meaning of a term used in a scientific or technological context and its meaning in everyday language (e.g. source, matter, body, energy,

machine)
✶ F.2.a. Communicates using appropriate types of representations that reflect the rules and conventions of science and technology (e.g. symbols, graphs, tables, drawings, sketches, norms and standardization)

Living Things

\+ D.1.a. Describes the physical characteristics that demonstrate how animals adapt to their environment
↻ D.2.a. Provides examples of how living things are used (e.g. meat, vegetable, wood, leather)
\+ D.3.a. Describes the impact of human activity on the environment (e.g. use of resources, pollution, waste management, land use, urbanization, agriculture)

Strategies

- Exploration strategies
  - Drawing a diagram for the problem or illustrating it.
  - Exploring various ways of solving the problem.
  - Taking into account the constraints involved in solving a problem or making an object (e.g. specifications, available resources, time allotted).

- Instrumentation strategies
  - Resort to drawing to illustrate a solution (e.g. sketch, diagram, technical drawing)
  - Resort to consignment tools (e.g. sketch, graph, protocol, notebook or journal).

Evaluation of learning

The evaluation criteria as well as elements promoting the understanding of the criteria related to the suggested activities are integrated into the student booklet. Since this is a task within a context, calling upon the production of a process, all the criteria may be used for feedback by the teacher.

When an activity presented in the booklet is very structured by the teacher (methods imposed), the criteria are presented in grey in the student booklet. This indicates that it is not recommended to evaluate the student on this element.

Interdisciplinary links

In geography, history and citizenship education

Potential targeted competency: To open up to the diversity of societies and their territories by comparing an element of the life of the Iroquois and the Algonquin around the 1500s.

The elements in the *Progression of Learning* targeted in this LES

Knowledge related to the organisation of a society in its territory

B. Iroquoian society around 1500	1	2	3	4	5	6
2. Elements of the society that affect the organization of the territory						
2.1. Demographic situation						
a. Describes the distribution of the population: along the St. Lawrence and in the Great Lakes region			→	★		
b. Indicates the way of life: sedentary			→	★		
c. Gives the approximate number of inhabitants			→	★		
3. Assets and limitations of the territory						
a. Indicates assets related to the relief (e.g. plains were good for farming)			→	★		
b. Indicates assets and limitations related to climate (e.g. the temperature and rain in the summer were good for farming; the temperature and snow in the winter limited activities and travel)			→	★		
c. Indicates assets and limitations related to bodies of water (e.g. rivers and lakes facilitated access to the territory; rapids limited travel)			→	★		
d. Explains why resources were assets (e.g. forests provided construction materials for longhouses and canoes; animals were used for food)			→	★		

Knowledge related to the diversities of societies and of their territory

B. Iroquoian society and Algonquian society around 1500	1	2	3	4	5	6
1. Indicates differences between Iroquoian society and Algonquian society around 1500:						
a. way of life (sedentary; nomadic)			→	★		
b. economic activities (agriculture; lack of agriculture)			→	★		
c. political structure (matriarchal; patriarchal)			→	★		
d. dwellings (villages of longhouses; wigwams)			→	★		

Housing in the 1500s – The vocabulary
Cycle 2 of elementary

The Vocabulary of the Progression of Learning

Assembling
Design
Energy
Equipment
Leather
Material
Need
Permeable
Plan
Resource
Shape
Sketch
Stem
Texture
Tree
Waterproof
Wood

The vocabulary associated to the General Learning Process in science and technology

Need
Prototype
Planning
Specifications booklet

Complementary vocabulary

While this vocabulary is not the subject of formal evaluation, it is recommended that the student have a look at it in order to begin using the words.

Bark
Branch
Cladding
Climate
Frame
Habitat*
House*
Housing, home
Link
Shelter*
Structure
Territory
Trunk
Wood

***** In science and technology, it is important to distinguish between the terms "shelter", "habitat" and "house". Shelter and house are terms that designate a place or a construction allowing animals and humans to live, to protect themselves. The habitat is an ecological concept to designate the environment in which a living being, animal or vegetal, lives.

Examples of shelters:

- Hive, nest, lair, hut, cave, hollow tree trunk.

Examples of habitats:

- The beaver's habitat may be described, in part as an area of fresh water and soft wood trees like birch.
- The habitat of the moose is the boreal forest, but it may also be found in mixed forests.

Complementary references

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General learning process in science and technology in elementary school
http://www2.cslaval.qc.ca/cdp/pages/primaire-outils-ressources.html

Vignettes (illustrations)
http://www2.cslaval.qc.ca/cdp/UserFiles/File/downloads/clipart_science_technology/

Tool usage techniques
Hand saw and mitre box
http://www2.cslaval.qc.ca/cdp/UserFiles/File/telechargement/tech_cutting_wood.pdf

Hot glue gun
http://www2.cslaval.qc.ca/cdp/UserFiles/File/telechargement/tech_gluing.pdf

Geography, history and citizenship education

Societies and territories (in French)
http://primaire.recitus.qc.ca/

The Canadian Encyclopedia

Architectural History: Early First Nations
http://www.thecanadianencyclopedia.com/articles/architectural-history-early-first-nations

Preparation phase	**Pages in the student booklet**
• Context related to everyday life o Reformulation of the problem • Initial ideas	Page 1 Page 2 Page 1 (orally)
Performance phase	
• Solutions trails • Planning (Materials) • Planning (Process) • Implementation (Solutions) • Report (Readjustments)	Page 3 Page 4 Page 4 Page 5 Page 6
Integration phase	
• Report (Review of initial ideas and the hypothesis) • Report (Unforeseen events or problems encountered) • Report (Acquired knowledge)	Page 6 Page 6 Pages 6 and 7
Learning activities* (to be carried out when deemed appropriate)	**Optional**
• Adequately and safely use the miniature hand saw and mitre box. • The comparison between the solution and Iroquois and Algonquin housing in the 1500s.	On the CDP site Annex to the guide

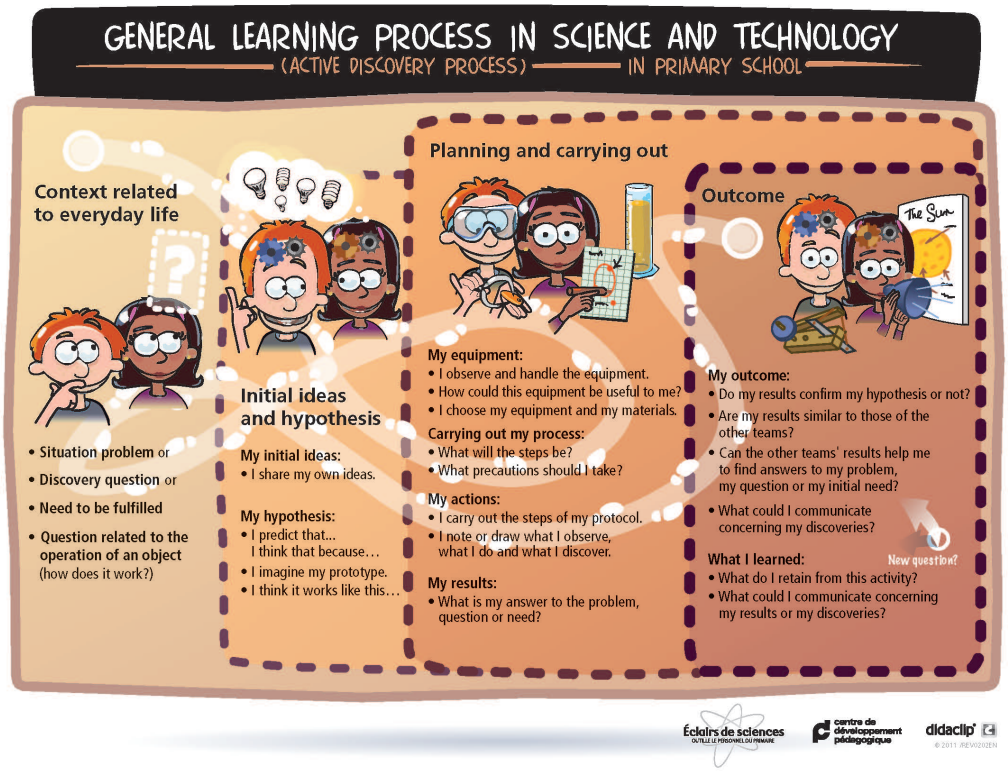
Animation guide
Important!

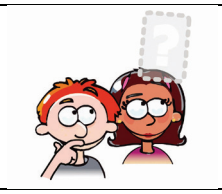
The next pages in this guide relate to the student booklet. There are suggestions for the animation of the learning situation.

For this task, we provide a single student booklet. This booklet allows the student to use a full range of strategies in order to find a solution to the problem. It is therefore an "open" booklet and the teacher should feel free to add what he deems appropriate for his students.

We have produced a single pedagogical guide to avoid duplicating documents. So that the students may experience a learning situation in science and technology, in the next pages we propose suggestions for animation that the teacher can adapt.

The proposed animation may seem linear. Much as scientists and technologists do, however, it is possible and even recommended to allow the students to go back over certain elements in order to readjust them. The only elements we ask the students not to modify are their initial ideas and hypotheses.

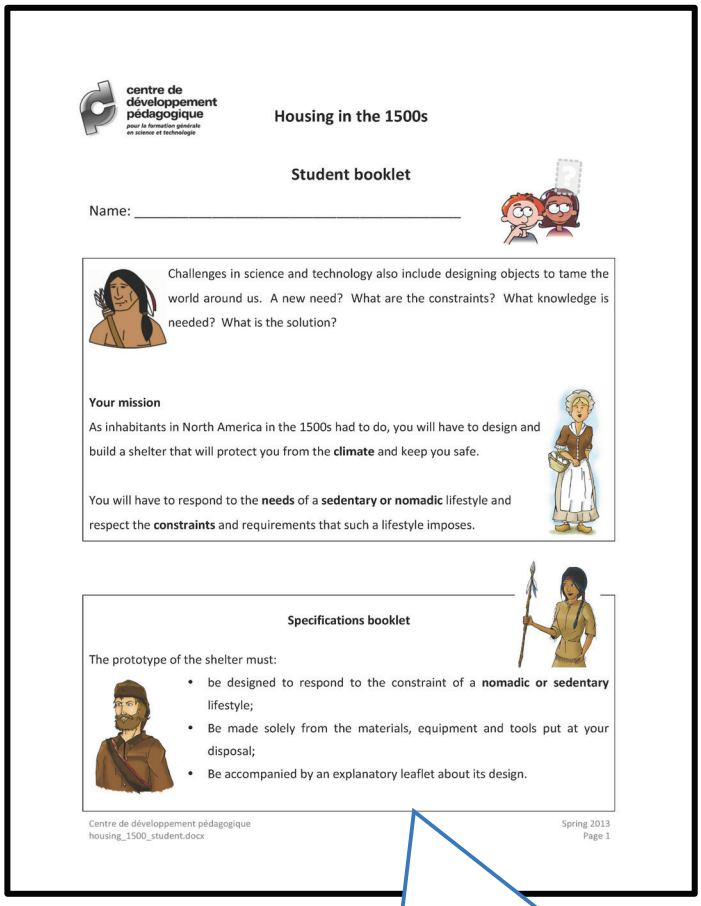




Preparation phase

Context related to everyday life

Estimated time: 15 minutes (to be validated)



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Housing in the 1500s

Student booklet

Name: _____

Challenges in science and technology also include designing objects to tame the world around us. A new need? What are the constraints? What knowledge is needed? What is the solution?

Your mission

As inhabitants in North America in the 1500s had to do, you will have to design and build a shelter that will protect you from the **climate** and keep you safe.

You will have to respond to the **needs** of a **sedentary or nomadic** lifestyle and respect the **constraints** and requirements that such a lifestyle imposes.

Specifications booklet

The prototype of the shelter must:

- be designed to respond to the constraint of a **nomadic or sedentary** lifestyle;
- Be made solely from the materials, equipment and tools put at your disposal;
- Be accompanied by an explanatory leaflet about its design.

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Page 1

Specifications booklet

The **specifications booklet** is a document which describes the use of a technical object as well as all the requirements and constraints that must be respected during design and fabrication.

(CDP – The specifications booklet, 2010)

1. Read the task: the trigger, the mission and the specifications booklet. Ensure that the mission is correctly understood.

- It may be appropriate to point out the key words and new words. The students can then circle them.
- In class, it will be necessary to agree on a common definition for the words “shelter” and “safety”.
- If this is the child's first contact with a complex problem and the general learning process in science and technology, the simplified general process poster and the booklet should be presented to him.
- You may want to make the most of the situation to present nomadic and sedentary lifestyles, or to reinvest this knowledge.

2. Important!

It is not recommended to present Native housing (wigwams and long houses) first. This could greatly influence the solutions put forward by the students.

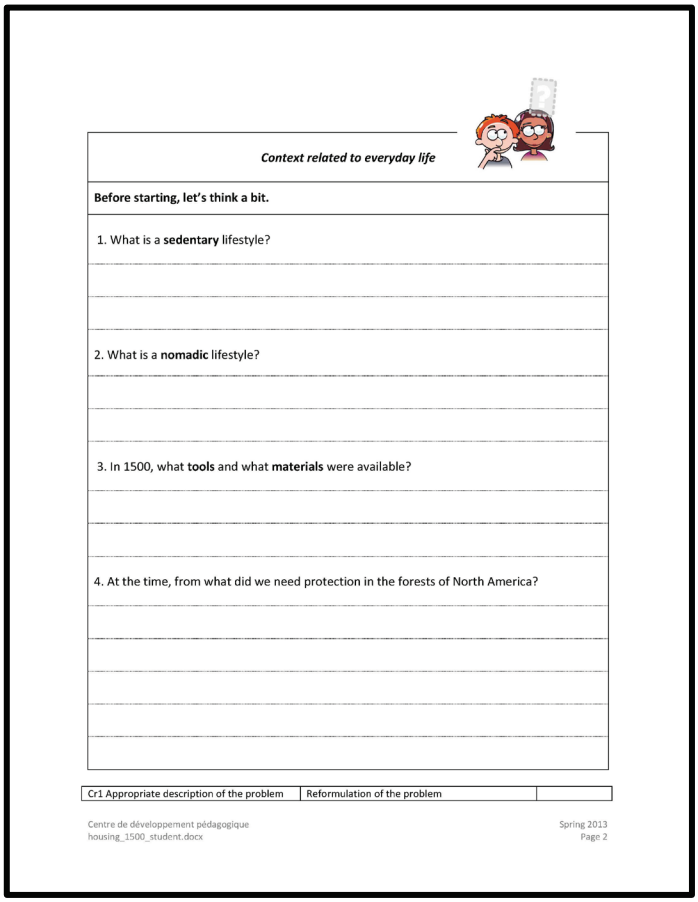
An activity[1] could be planned which would give the students the opportunity to evaluate their proposals for design solutions and compare them to those used by Native peoples. If this LES is presented to the students at the point in the cycle where they have seen these geography, history and citizenship education concepts, it will be a good opportunity for the teacher to note knowledge transfer.

[1] An activity is provided and available in an annex at the end of this guide.

Preparation phase

Context related to everyday life – reformulation of the problem

Estimated time: variable, depending on the students' familiarity with the general learning process in science and technology and depending on the framework chosen by the teacher.



Context related to everyday life

Before starting, let's think a bit.

1. What is a **sedentary** lifestyle?

2. What is a **nomadic** lifestyle?

3. In 1500, what **tools** and what **materials** were available?

4. At the time, from what did we need protection in the forests of North America?

Cr1 Appropriate description of the problem	Reformulation of the problem	

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Page 2

1. Ask the students to reformulate the problem using questions

- On the topic of reformulating the problem, you must emphasize to the students that it is not critical to have the complete answers right away. These answers must reflect their understanding of the problem based on their knowledge and on their interpretation of the proposed context.

- This part may give rise to a class discussion, but each student should formulate his own answers to the questions presented here.

2. Important!

It is not systematically planned for students to go in the forest and collect materials. They will be asked to work the prototype in the form of a mock-up using materials[2] allowing them to simulate materials that were common in that period.

In cases where woods are accessible and if the teacher so desires, it may be appropriate to plan a short walk to collect branches and twigs in order to work with more realistic materials than those suggested.

It is strongly recommended, before the outing, to clarify certain rules regarding collection:

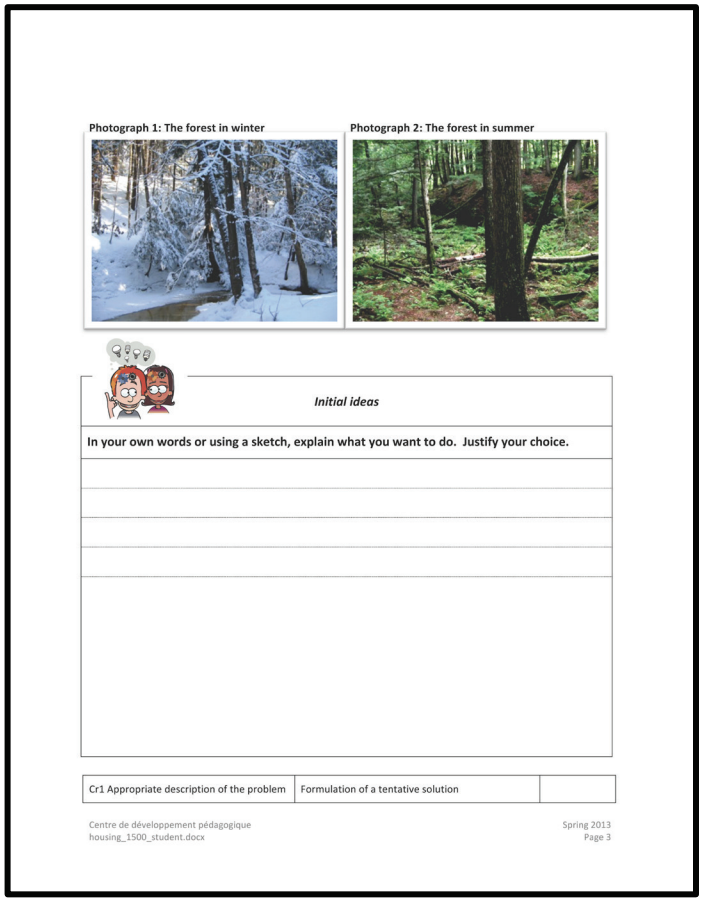
- They will collect branches, twigs or bark only from dead trees, not from a living tree or shrub.
- They will not collect living plants.
- They should avoid trampling plants.

[2] For complementary information on all these items, please refer to the *Suggestions for materials* section at the end of this guide.

Preparation phase and beginning the performance phase

Initial ideas and solutions trails

Estimated time: variable, depending on the students' familiarity with the general learning process in science and technology.



Photograph 1: The forest in winter

Photograph 2: The forest in summer

Initial ideas

In your own words or using a sketch, explain what you want to do. Justify your choice.

Cr1 Appropriate description of the problem	Formulation of a tentative solution	

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Page 3

1. Formulate a solutions trail

It is recommended that the materials be presented to the students that so desire. You may plan materials demonstration posters and show them trays on which they can carry out their shelter prototype.

- It is recommended that you use pen for this part of the task. The students will be asked later to compare their solutions trail to the prototype carried out.

- The "explain your choice" part is important and is comparable to the "I think it because" in a scientific context where the hypothesis is used. This may present a considerable challenge for some students, particularly the younger ones. Here are some suggestion for strategies you may want to put into place:
  - Have the students give their "explanations" orally.
  - Ask the students to relate a personal experience.

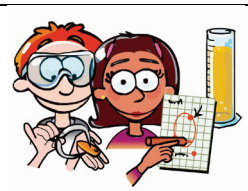
Prototype

- First model, original model
- First example of a model built before large scale production.
- Incomplete model of a material or software product used to give an idea of the product or software to the client and to explain the problems encountered to the developers. (Antidote, 2008)

Mock-up

- Reduced scale reproduction

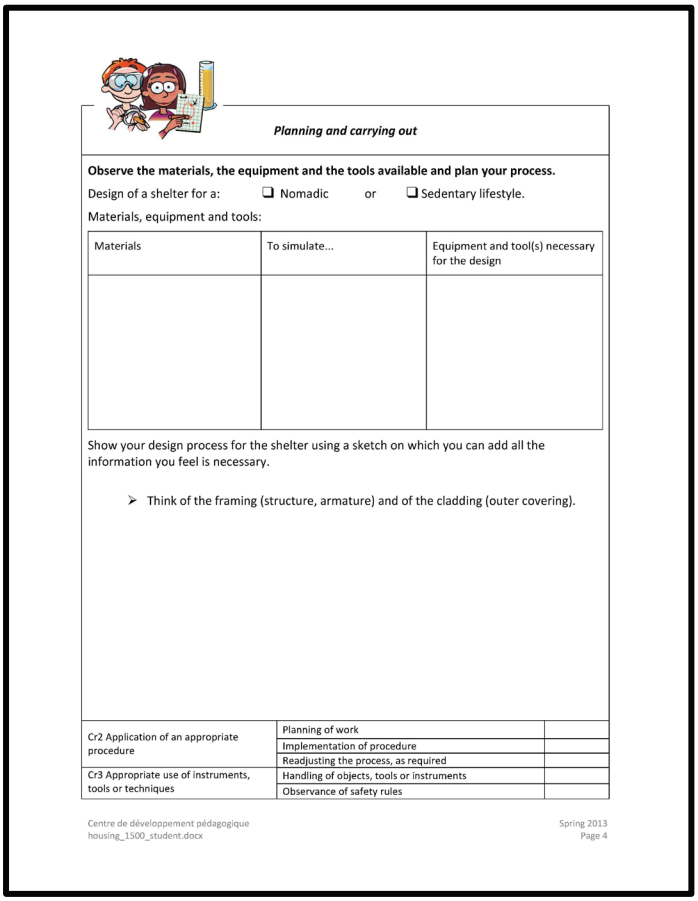
(Antidote, 2008)



Implementation phase

Planning – the procedure

Estimated time: 40 minutes, at least one day before implementation



Planning and carrying out

Observe the materials, the equipment and the tools available and plan your process.

Design of a shelter for a: ❑ Nomadic or ❑ Sedentary lifestyle.

Materials, equipment and tools:

Materials	To simulate…	Equipment and tool(s) necessary for the design

Show your design process for the shelter using a sketch on which you can add all the information you feel is necessary.

- Think of the framing (structure, armature) and of the cladding (outer covering).

Cr2 Application of an appropriate procedure	Planning of work	
	Implementation of procedure	
	Readjusting the process, as required	
Cr3 Appropriate use of instruments, tools or techniques	Handling of objects, tools or instruments	
	Observance of safety rules	

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Page 4

1. Form teams of two (2) students

- In pairs, the students can carry out the manipulations. Each student will need to complete his booklet individually.

- We recommend that you explain the term "sketch" to the students, namely a quick drawing that represents what they intend to do.

2. Present the materials[3]

The students may use the materials presented in class, but some elements may not be useful to them. In certain cases, they can agree with the teacher to add materials.

3. Work on planning the choice of materials with the students

The students may have great difficulty in planning the quantity of materials necessary for building their prototype. It is appropriate to plan a few minutes in class to plan a strategy: estimate the size, number and length of materials required. You may also foresee a point system (cost) associated to the quantity of materials for more autonomous students.

4. Knowledge linked to the choice of materials

The materials chosen must respond to characteristics which allow real materials, which might be found in the forest, to be simulated. The student must justify his choices by describing, among other things, the shape and texture of materials. The student must also consider other properties, like waterproofness or flexibility, when he makes his choices.

[3] For complementary information on all these items, please refer to the *Suggestions for materials* section at the end of this guide.

One example of an erroneous concept: during experimentation in class, we noticed that the students confused construction materials with the structure. For example, a student would indicate that he would use wooden pieces to simulate the walls, rather than saying that these pieces would simulate branches.

5. Important! Review the plan before carrying out

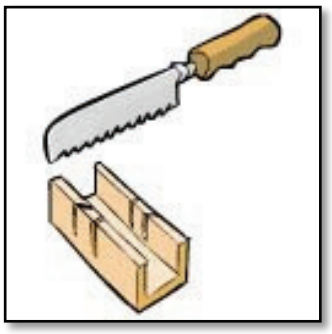
It is necessary to provide enough support and time for the students to succeed in estimating their material needs. To this end, you may provide a separate, detailed document that the student can hand in to the teacher. Regardless of the strategy adopted, it is recommended that you pick up the teams' plans and review the quantities calculated, if necessary, in order to avoid a crowd and wasted materials.

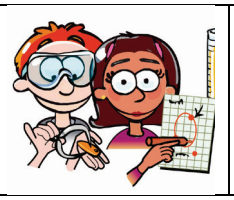
6. The hand saw and mitre box

For students who have never worked with a hand saw and mitre box,
It is preferable to plan a demonstration of the use of this tool to allow for familiarisation to it.

http://www2.cslaval.qc.ca/cdp/UserFiles/File/telechargement/tech_cutting_wood.pdf

Note: even though this tool was not available in the 1500s, it is preferable, for safety reasons, to use it.



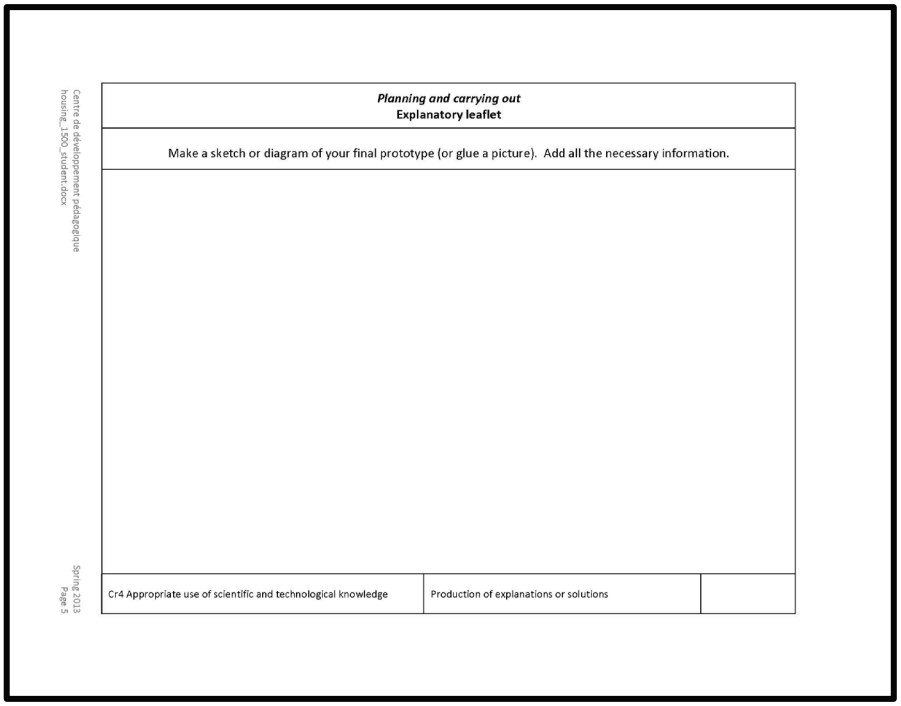


Performance phase (continued)

Planning and carrying out – Explaining the prototype

Estimated time: 30 minutes

1. Illustration and explanation of the prototype



If the students are autonomous and resourceful, it would be appropriate to allow them to represent their prototype themselves using a drawing, and that they use their own judgement to attach the necessary information. You may suggest the use of different colours to show various parts, or you may show the students various explanatory leaflets (toy wrappings, tools, usage guides, etc.).

2. Implementation in teams of two

Even if the students work in teams of two for the design and fabrication of the prototype, you must ensure that their note-keeping is individual. You must also supervise those who have special needs (reading, motor skills, etc.).

3. Consignment of traces

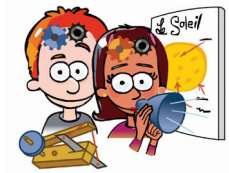
It is important to underline that the booklet presented allows the student to leave traces of his ideas, his process, his results and his answer to the problem presented. He may illustrate his understanding of the problem through drawings, sketches or words. A balance is sought between the time devoted to resolving the problem and the time required to consign traces of the problem.

4. Adjustment during the experiment

Adjustments during the experiment are frequent. These may pertain to details not initially foreseen or to major revisions of the initial plan. A simple, quick way to consign the traces of these adjustments is to encourage the use of a different colour pencil to annotate the sketch or the process.

5. Testing the prototypes

The prototypes designed by the students should be tested. Tests could be chosen in class: water resistance, resistance to wind, easy assembly and disassembly (nomadic shelters), etc.

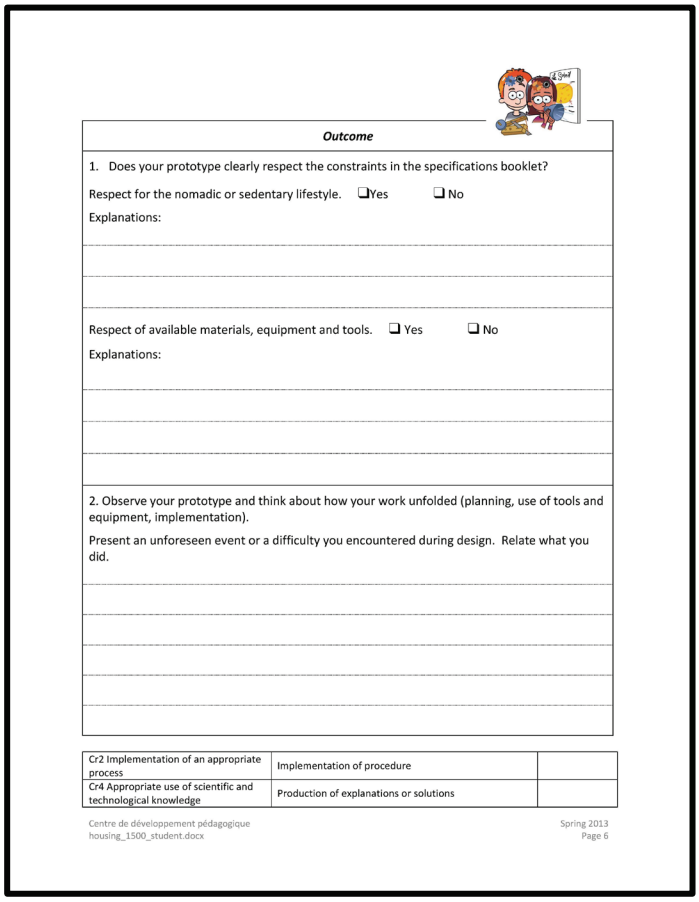


Performance phase (end) and integration phase

End of carrying out and Outcome

Estimated time: 20 to 30 minutes or more, if you want each student to be able to express themselves.

1. The review of the solutions trail



Outcome

1. Does your prototype clearly respect the constraints in the specifications booklet?

Respect for the nomadic or sedentary lifestyle. ❑Yes ❑ No

Explanations:

Respect of available materials, equipment and tools. ❑ Yes ❑ No

Explanations:

2. Observe your prototype and think about how your work unfolded (planning, use of tools and equipment, implementation).

Present an unforeseen event or a difficulty you encountered during design. Relate what you did.

Cr2 Implementation of an appropriate process	Implementation of procedure	
Cr4 Appropriate use of scientific and technological knowledge	Production of explanations or solutions	

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Page 6

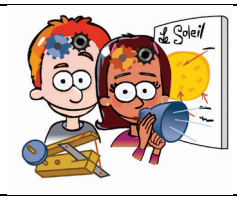
In the context of a design, an important part of the implementation consists in make the solution conform to the initial constraints in order to adjust the solution, if necessary, and to thereby ensure a proper response to the need. Page 6 of the student booklet allows this important step of the general learning process in science and technology to be guided. It may be preferable to do this part orally, rather than in writing, since the students are not yet quick or proficient writers.

2. For a case where the prototype is not finished or is non-functional

It is possible that certain students run out of time for building their prototype or don't succeed in doing so. Then, it is appropriate and pertinent to take the time to explain to the students that it frequently happens to scientists or technologists to have to start their work over again before suggesting an appropriate answer to a problem or question. They will take this into account for their next tasks.

3. Unforeseen events and problems

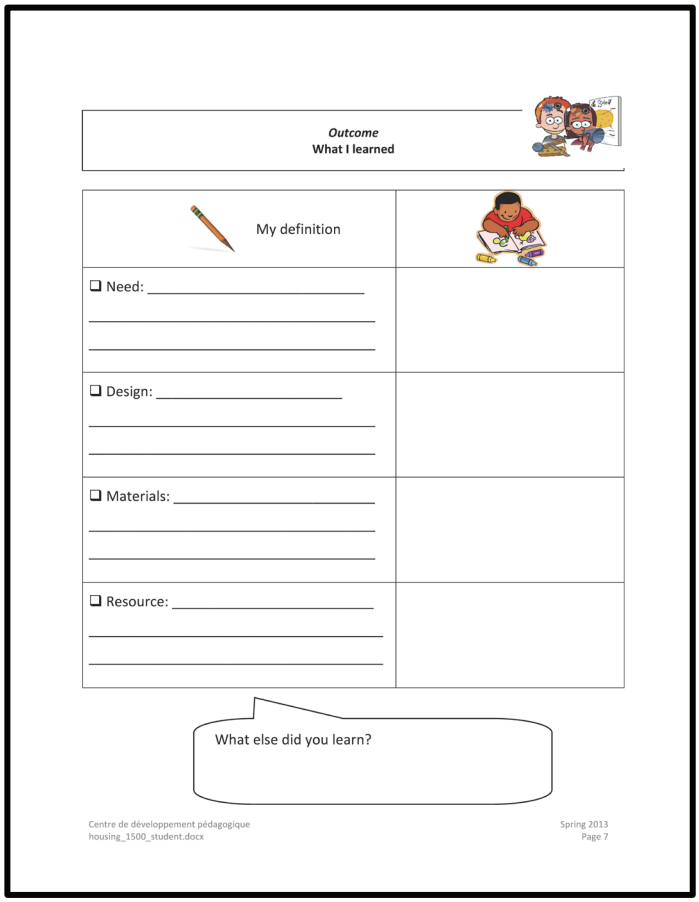
Finally, we will ask the students to share their experience in class by relating the unforeseen events or problems they encountered while performing the experiment. These may be of any order (difficulty in working with a team, difficulty in correctly noting the results, equipment or material breakdown etc.) You may prefer to do this step orally, but it should not be omitted. Indeed, it is at this time that the student learns a great deal in relation to the task. He may then reinvest his acquired knowledge in tasks to come.



Integration phase

Outcome

Estimated time: 30 minutes or more if you want each student to be able to express himself.



Outcome
What I learned

My definition	
❑ Need: _____	
❑ Design: _____	
❑ Materials: _____	
❑ Resource: _____	

What else did you learn?

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housing_1500_student.docx

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1. Learning

To conclude, it is important to recognise what we have learned. What the student has learned may be of any order. Some may be techniques (e.g. using scissors, glue gun or hand saw properly). Other learning enriches the vocabulary (e.g. learning new words or different meanings of a familiar word). But there is also what one learns about science and technology. For example, a student may learn that it is not "important" that the final result, his prototype, is different from his solutions trail.

We suggest that you set aside the time for the students to verbalise what they have learned.

Then, the lexicon sheet on page 7 may be completed. The student can tick off the new words he learned and will be invited to note his personal comprehension of the term and to illustrate the concept.

Evaluation

The table below allows you to retrace the evaluation elements that can be found in the student booklet.

Synthesis of traces for evaluation

Evaluation criteria	Elements promoting the understanding of the criteria	Page
Cr1 Appropriate description of the problem	Reformulation of the problem	1 (orally) + page 2
	Formulation of a tentative explanation or solution	3
Cr2 Application of an appropriate procedure	Planning of work	4
	Implementation of procedure	In action + pages 4, 5 and 6
	Readjusting the process, as required	In action + page 4 (different colour pencil)
Cr3 Appropriate use of instruments, tools or techniques	Handling of objects, tools or instruments	In action + page 4 (planning)
	Observance of safety rules	In action
Cr4 Appropriate use of scientific and technological knowledge	Production of explanations or solutions	5 and 6
	Use of terminology, rules and conventions specific to Science and Technology	Everywhere
Proficiency of subject-specific knowledge targeted in the *Progression of Learning* [4]	Material World	4, 5 and 6
	Strategies[5]	Everywhere

[4] It is important to remember to include learning related to techniques and instrumentation (section E) and appropriate language (section F) for each world.

[5] While feedback regarding this element must be provided to the student, it is not considered in the results communicated on the report card.

Suggestions for materials

Materials, equipment and tools to be put at the students' disposal for a class of 28 students

The quantity of materials is an estimate. Each team will not choose the same materials.

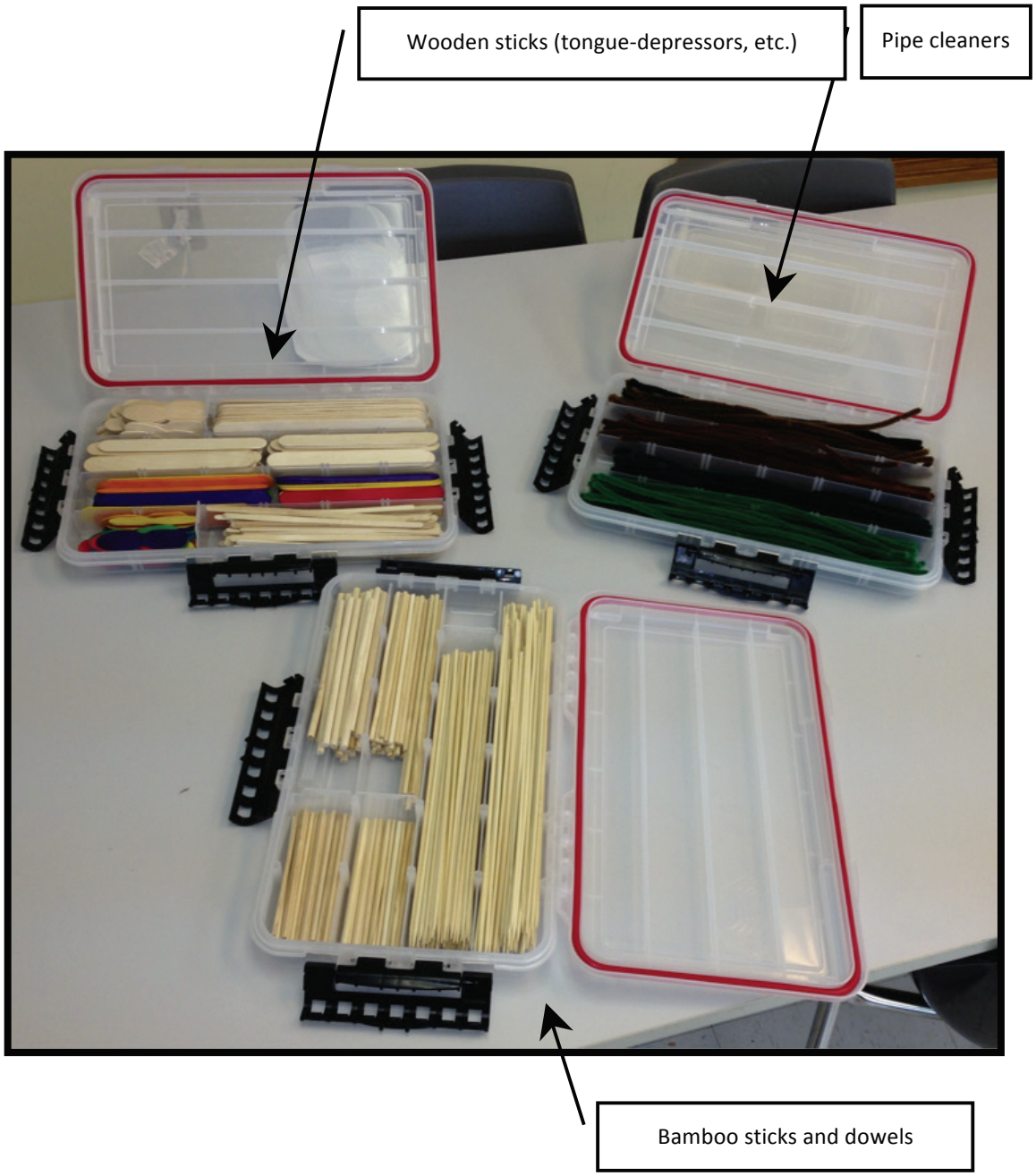
Items	Notes
14 Styrofoam plates	Each team of two students should have a tray to be used as a base to make the prototype. The size of the available tray will determine the scale to which the students will work. We suggest Styrofoam plates or trays, but this could be replaced by corrugated cardboard, depending on the available resources. Ideally, it should be a material in which a stick can be inserted. This material simulates the ground.
14 Styrofoam trays	
About 100 tongue depressors or *popsicle* sticks	These sticks may be used to simulate boards or logs.
About 100 coffee stir stick	These sticks may be used to simulate flexible branches.
About 100 skewer sticks	These sticks may be used to simulate thin tree trunks.
About 100 pipe cleaners	The pipe cleaners could be used to simulate flexible branches.
About 100 drinking straws	The straws could be used to simulate reeds.
About 100 various diameter dowels, in 20 cm lengths	These dowels may be used to simulate tree trunks.
About 25 squares of felt (8.5 x 11 in.)	The felt squares may be used to simulate tarps made of skins (leather).
About 25 paper lunch bags	The paper bags may be used to simulate tarps made of skins (leather) or bark.
About 25 thin sheets of cardboard (8.5 x 11 in.)	The thin sheets of cardboard may be used to simulate tarps made of skins (leather) or bark.
About 25 sheets of foam board (8.5 x 11 in.)	The sheets of foam board may be used to simulate tarps made of skins (leather) or bark.
About 20 strips of leather or leatherette	The leather strips may be used to simulate leather rope or tendon. They may be found in the arts and craft section (necklace making).
String	The string may be used to simulate rope.
Sticky tack	The sticky tack may be used to simulate resin or other adhesive substances.
Plasticine	The plasticine may be used to simulate resin or other adhesive substances.

Items	Notes
Scissors	Most students have scissors, but you should plan for more heavy duty scissors for certain materials.
2 hot glue guns and glue sticks	The hot glue may be used to simulate resin or other adhesive substances. Specialised work stations should be set out for this tool.
White glue	The white glue may be used to simulate resin or other adhesive substances.
2 small mitre boxes and hand saws	The mitre boxes are useful for cutting the dowels, tongue-depressors and skewer sticks. Specialised work stations should be set out for this tool.
4 punches	They are useful for punching cardboard, foam board and paper. Specialised work stations should be set out for this tool.
Masking tape	It is not recommended that you provide masking tape from the start. Its use can be allowed for students who ask for it.

Additional note

- It is possible to cut the skewer sticks using side cutters. This technique is difficult for younger students, however. In addition, safety glasses would need to be worn.

Suggestions for materials organisation in class



ANNEX

Comparison of the prototype with housing in Iroquois and Algonquin societies in the 1500s

1. What do you know about the two following structures?

 **The long house**	 **The wigwam**

2. Look at the prototypes presented and find a resemblance with the wigwam or the long house. Classify them in two categories, according to their resemblance.

Correction

 The long house	 The wigwam
There are **two doors**, one at each end, but no windows. It's **solidly built** and lasts a long time. There's a **central aisle** where the fireplaces are. Above each fireplace, there's an **aeration hole**. There are **bunk beds.** **Bark** walls separate the space between families. It may house between 25 and 60 people. It is made from **wood** and **bark**. Two families share a **fireplace.** It is easy to **enlarge.**	Large **cone** or **dome** shaped tent. It is made from **tall tree branches** covered with **skins** and **bark**. It may house a few families. It is easy to **put up, take down** and **transport**. The women are able to put it up in about an hour.