Name: _____ Group: _____

THE PROJECT

CALL FOR TENDERS	
Reference No.:	RP-09-Park-90
Company:	Lejouet
Date of publication:	March 31, 2008
Deadline for receiving tenders:	August 16, 2008
Notice title:	Best overall proposal
Notice type:	Call for tenders
Agreement type:	Design services
Region of delivery:	National capital
Tendering procedures:	Any interested supplier may submit a tender
Competitive procurement strategy:	Best overall proposal

Nature of requirements:

The company Lejouet is inviting designers to create a prototype of a miniature amusement park ride to complement its collection of figurine amusement parks. Consultants will supply the prototype of the ride. They will be responsible for all steps in making the prototype.
Interested firms must submit a prototype that conforms to the attached *Specifications* document. Late submissions will not be considered.

Delivery date: See above

In this learning and evaluation situation, you will play the role of one of the designers working at the firm that responds to this call for tenders.

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THE PROJECT (*continued*)

Specifications

Overall function of object
- Prototype models the operation of the ride.

Material constraints
- Object must be made with the supplied or approved materials.
- Prototype of the ride must not exceed the following dimensions: 500 mm x 300 mm.
- Once assembled, prototype must be operational.
- Ride may be activated by a motor.

Aesthetic constraint
- Prototype must have a finished appearance.

Safety constraint
- Prototype's individual parts must not have any sharp edges.

Financial constraint
- Use of materials must be optimized so as to avoid wastage.

Environmental constraint
- Any materials not used by the end of the project must be recycled.

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CREATING THE CONTEXT

I ask myself questions

1. Name the steps involved in building a prototype of the ride.

2. How will you measure the prototype's parts?

3. What is the difference between measuring and marking?

4. How will you machine the prototype's parts?

5. What machining techniques could you use?

6. What techniques could you use to correct a part's imperfections?

7. How will you assemble the prototype?

8. How could you assemble the prototype's parts?

9. What is the purpose of finishing the prototype?

Name: _____ Group: _____

CREATING THE CONTEXT (*continued*)

I must

10. In your opinion, what is the project's goal?

_____

_____

I think

11. Describe the ride you intend to build.

_____

_____

12. In your opinion, what is the most appropriate construction solution for your ride? Draw the ride's design plan. Use symbols to indicate the movement of parts, the constraints they will be subjected to and the forces at play.

Reflection

	Yes	No
• Does my design plan comply with the specifications?	☐	☐
• Do I clearly understand the following concepts?	☐	☐
- measuring (direct measurement with a ruler)?	☐	☐
- shaping or machining (machines and tools)?	☐	☐
- manufacturing (roughing, finishing, characteristics of the lay out)?	☐	☐

Name: _____ Group: _____

PLANNING THE PROJECT

I plan

Develop a plan of action.

1. Draw one or more technical diagrams of the prototype. Be sure to include the following information on the drawings:

- names of the parts
- materials to be used
- linking components and types of guides to be used
- any other useful information for building the ride

Name: _____ Group: _____

PLANNING THE PROJECT *(continued)*

2. Compile a list of materials and equipment needed to build the prototype of the ride.

- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____

3. What safety rules should you follow when making parts for the prototype?

_____

_____

_____

_____

_____

Have your plan of action approved by the teacher before building the prototype.

Teacher's approval ☐

Reflection

	Yes	No
Have I considered other possibilities for building the prototype?	☐	☐

Name: _____ Group: _____

INITIATING THE PROJECT

I design

1. Build your ride according to the construction diagram(s).

2. If you modify your plan of action, indicate these changes on the list of materials and equipment. Be sure to write down all modifications.

3. Did you work in a safe manner? Justify your answer with two examples.

Reflection

	Yes	No
Did I write down and justify all the modifications made to my plan of action?	☐	☐

Name: _____ Group: _____

THE FINAL TEST

I verify

After verifying the operation of your ride, answer the following questions:

1. Does the prototype meet the overall function of the object? Explain your answer.

2. Did you respect all the constraints in the specifications? If not, explain your answer.

3. Did you make any modifications to the plan of action? Justify each modification.

4. Did you encounter any difficulties when building the prototype of the ride? If yes, what where they?

5. Suggest improvements to the prototype.

Name: _____ Group: _____

MY EVALUATION

Use the evaluation grid on the next page to do a self-evaluation. Write A, B, C, D or E in the appropriate space in the table.

SSC 1 Seeks answers or solutions to scientific or technological problems				
Criteria *	**Observable indicators**	**Me**	**Teacher**	**Comments**
1	**Creating the context** Formulation of the goal and creation of a design plan		☐ With help	
2	**Planning the project** Relevance of elements in the plan of action: materials and equipment, and technical diagram		☐ With help	
3	**Initiating the project** Respect for the technical diagram and safety rules when building the prototype of the ride		☐ With help	
4	**The final test** Verification of prototype operation and proposed improvements		☐ With help	

*** Evaluation criteria**

1. Appropriate representation of the situation
2. Development of a suitable plan of action for the situation
3. Appropriate implementation of the plan of action
4. Development of relevant conclusions, explanations or solutions

Name: _____ Group: _____

EVALUATION GRID

SSC 1 Seeks answers or solutions to scientific or technological problems

Criteria*	Observable indicators	A	B	C	D	E
1	**CREATING THE CONTEXT** Formulation of the goal and creation of a design plan	The goal is very clearly stated and linked to the project AND the design plan is complete.	The goal is clearly stated and linked to the project AND the design plan contains a few minor errors.	The goal is more or less clearly stated or is not linked to the project OR the design plan contains several errors.	The goal is more or less clearly stated or is not linked to the project AND the design plan contains several errors.	The work needs to be redone.
2	**PLANNING THE PROJECT** Relevance of elements in plan of action: materials and equipment, and technical diagram	All the materials and equipment are relevant AND the technical diagram is complete	All the materials and equipment are relevant AND the technical diagram contains a few minor errors.	The materials and equipment are more or less relevant OR the technical diagram contains several errors.	The materials and equipment are more or less relevant AND the technical diagram contains several errors.	The work needs to be redone.
3	**INITIATING THE PROJECT** Respect for the technical diagram and safety rules when building the prototype of the ride	The prototype complies with the technical diagram AND the work is done in a safe manner.	A few elements in the prototype do not comply with the technical diagram AND the work is done in a safe manner.	Several elements in the prototype do not comply with the technical diagram AND the work is done in a safe manner.	The prototype does not comply with the technical diagram OR the work is not done in a safe manner.	The work needs to be redone.
4	**THE FINAL TEST** Verification of prototype operation and proposed improvements	The prototype is operational and respects all the constraints in the specifications AND the proposed improvements are relevant.	The prototype respects most of the constraints in the specifications AND most of the proposed improvements are relevant.	The prototype respects most of the constraints in the specifications but the proposed improvements are more or less relevant.	The prototype does not respect most of the constraints in the specifications.	The work needs to be redone.

* Evaluation criteria

1 Appropriate representation of the situation
2 Development of a suitable plan of action for the situation
3 Appropriate implementation of the plan of action
4 Development of relevant conclusions, explanations or solutions