

# Rock 'n' Roll Marbles!



TEACHER'S GUIDE  
CYCLE ONE ELEMENTARY



MONTREAL  
SCIENCE  
CENTRE



SOCIÉTÉ IMMOBILIÈRE DU CANADA  
CANADA LANDS COMPANY

Canada

# Rock 'n' Roll Marbles!

Come meet *Tourbillon*, a little dog who loves his marble collection! Can you make him a really long marble run? He'll be delighted.

## WELCOME

### to the Montréal Science Centre

The educators at the Montréal Science Centre invite you to take part in **Rock 'n' Roll Marbles**. This **60-minute** activity follows the Quebec Education Program and provides an experience where the joy of learning leads to the acquisition of new skills.

#### DID YOU KNOW?

That our school programs...

- adhere to the MELS progression of learning;
- offer a variety of experiences that are different from classroom activities;
- are run by an educator who takes charge of the group;
- comprise student-centered, interactive activities that make learning fun.



## A FOUR-STEP TEACHING APPROACH

# 1

### Setting the stage

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The students are greeted by Tourbillon, a friendly stuffed animal who loves to collect marbles. He explains his passion for games that make marbles fall, turn, roll and spin. The longer it takes them to travel through a marble run, the happier Tourbillon is. So he asks the students to use different objects to build a run that makes the marbles roll for as long as possible.

# 2

### All about friction

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Before building a run, it's important to know the word friction and to understand certain basic concepts about it. Students play a game in which they make observations and formulate hypotheses as they take part in demonstrations about friction: how to get a marble to roll, how changing the slope angle causes the marble to roll at different speeds, observing whether the marble rolls differently depending on the object it rolls over, etc.

# 3

### Build a marble run

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To make Tourbillon happy, the students (in teams of three) set about building a marble run. First, they discover a bin filled with interesting objects such as a length of tubing, a sandal, a funnel, a pencil case, etc. Then, using their imagination, their observational skills and the materials provided, they experiment with the concept of friction. They have fun building the run, taking risks, making mistakes, adjusting the run's configuration, and retesting how the marble descends the run.

# 4

### Presentation and conclusion

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Now it's time to present the runs to Tourbillon and the other teams. How many seconds will it take the marbles to roll, slide and spin down the run to the end? Tourbillon is happy, thanks the students and invites them to share their discoveries and repeat the new word they have just learned.

