Research CommunicationⅠ April 21, 2022

**Expect! Explain! Experiment!**

Goal: You can explain your guesses on scientific experiments in English

* Experiment #3 ■ 【 Tools: Balloon, Truck, and Box 】

![fuusen[1].png]()Fix a helium balloon onto a truck and cover it with a transparent box.

Push the truck forward quickly.

　The balloon will …

1. lean backward ② lean forward ③ stay upright

Because…

![R5B3A001C[1].gif]()■ Experiment #8 ■ 【 Tools: Pendulum of a Magnet 】

Put a sheet of aluminium under a pendulum of a magnet.

The pendulum will …

1. not swing ② swing quickly ③ swing as usual

Because…

* Experiment #19 ■ 【 Tools: Iron Balls and a Magnetic Ball 】

You have 5 iron balls and 1 magnetic ball.

Arrange 4 iron balls and 1 magnetic ball in a line (The magnet is on the end).

　Roll the remaining iron ball toward the magnetic ball.

When the iron ball hits the magnetic ball, the iron ball on the other end will …

1. not move ② pop off ③ roll off and then come back

Because…

【 Useful Expressions 】

accelerate　加速する law of conservation of energy　エネルギー保存の法則

air resistance　空気抵抗 law of inertia　慣性の法則

attract　～を引きよせる magnetic field　磁場

(electrical) current　電流 magnetic force　磁力

friction　摩擦 magnetism　磁気

kinetic energy　運動エネルギー potential energy　位置エネルギー

 repel　～に反発する、～をはじく

for teachers

3 min. Instruction (title, goal)

2 min. Chorus reading of [Useful Expressions] (Mark)

4 min. Watch a short movie and guess what will happen

2 min. Make pairs and discuss in English

3 min. Explain why (in groups of 4) Teachers help them

3 min. Share ideas　Teachers have 1 of the group members explain to the class　　　　15 min. × 3

1 min. Watch the result on the movie (#3 #19)

or Actually do the experiment (#8)

2 min. Comments (Mr. Yoshimura)