

# NAMAZU CHALLENGE n°3 2018 - 2019



The Namazu challenge is a fun competition between schools that allows you to get acquainted with seismology, and in particular this year, with the planet Mars, that the INSIGHT mission will explore! The challenge is open rather to classes from grade 8 to grade 10 ... but everyone can compete.

Episode 3 – Questions issued on January 15, 2019 ; answers due on or before the April 1, 2019 to [namazu@geoazur.unice.fr](mailto:namazu@geoazur.unice.fr)

## Part I. InSight is on Mars

As in previous challenges, this first part will enable us to get better acquainted with the InSight mission.

For each of the following questions, find the answer(s).



for each correct answer

Q1. On December 1, 2018, InSight sensors were able to record the vibration emitted by...

- the Martian wind
- a Martian earthquake
- a rocket landing
- an auxiliary motor

Q2. In the 2nd quarter of January, a protective shield will be deployed around the seismometer (SEIS) to protect it from :

- The Martian winds
- The extreme temperatures
- Acid rain
- Falls of possible meteorites

Q3. Although SEIS is the first seismometer capable of measuring the Martian surface vibration precisely, this is not the first mission to Mars to take a seismometer.

Name the two other missions to have had such an instrument.

- Viking 1 and 2
- Spirit and Opportunity
- Opportunity and Mars Express
- Mars Pathfinder and Phoenix

Q4. How does InSight communicate with Earth?

- By sound waves
- By radio waves
- By infrared waves
- By gamma rays

Q5. The photograph below was the first picture taken by InSight after landing. What are the stains visible on this picture ?

- Mud glued onto the lens
- Development of bacteria during the trip
- Regolith glued onto the lens
- Impacts on the glass of the lens



Q6. How often SEIS seismometer expected to collect data :

- At regular intervals throughout the mission
- More often during the summer
- More often during the winter

Q7. HP3 takes Mars temperature, revealing just how much heat is still flowing out of the interior of the planet. But what causes this heat ?

- The radioactive decay
- The speed of rotation of the planet on its axis
- The heat produced by previous NASA missions
- Atomic fission at the centre of the core

Q8. Scientists expect the rate of heat flow on Mars to be :

- lower than that of the Earth
- higher than that of the Earth
- almost identical
- No estimates have yet been made

Q9. What is the expected duration of the operational phase of this mission ?

- A few weeks
- At least 2 years
- At least 10 years
- At least 100 years

Q10. The resolution of the cameras on InSight is:

- Much lower than an HD image
- Similar to the resolution of an image in HD
- Similar to the resolution of an image in 4K
- Better than an image in 4K

## Part II. Current images.

InSight's activity has been rich over the last few weeks and many photographs have been broadcasted in the media. Research and identify the images below.



for each correct answer

