https://toegang.malmberg.nl/static/images/logo.png

**Actuele lesbrief Engels – Earth’s Fast-Moving Magnetic Pole**

**Voor de docent**

De magnetische noordpool is aan het verschuiven, hij schuift de laatste jaren zelfs steeds sneller op. Dat heeft gevolgen voor onze navigatiesystemen.

**ERK-niveau**

Lezen B1 – *Oriënterend lezen: Kan in langere teksten op internet of in andere media informatie zoeken over thema's binnen het eigen interessegebied (B1+). (LEB1-2b)*

Leesstrategieën - *Kan de betekenis van zo nu en dan voorkomende onbekende woorden afleiden uit de context en de betekenis van zinnen herleiden, op voorwaarde dat het besproken onderwerp bekend is.*

*- Kan digitale technologie zoals internet en zoekmachines gebruiken om woord- en zinsbegrip te controleren, indien toegestaan.*

**Intro**

The Earth’s magnetic North Pole is moving pretty fast, scientists say. What’s going on?

Assignment 1

Read the assignment and write down the answers in English. You may use English-language Internet sources to help you.

a Make a list of words you use to give directions. Start with the English words you already know. Next, look up any words you know in Dutch but not in English. Copy them too

b Find stories of GPS directions that went wrong. Copy the titles (and links) of the stories you found.

**Earth’s Magnetic Pole on the Move**

Earth’s magnetic North Pole isn’t behaving how scientists expected. The magnetic North Pole is rushing away from Canada, towards Siberia. This is what the science journal *Nature* reports.

This means the navigational models are becoming dangerously inaccurate. The models are based on where the magnetic poles are. We all use these models to know where we are and where we are going.

Deep inside the Earth is a giant ball of very hot liquid iron. This iron moves as the Earth spins. The iron creates a giant magnet inside the Earth. Like all magnets, the Earth’s magnet has two ends. They are called “poles” (North and South). A compass shows us where north is because the needle has a magnet attached to it. This magnet reacts to the Earth’s magnetic field.

The magnetic field is necessary for our survival on Earth. It deflects unhealthy radiation from space. It also keeps Earth’s water and atmosphere in place.

The magnetic pole is moving so quickly that experts have taken an unusual decision. They will soon give the World Magnetic Model an urgent update. This model is used in modern navigation systems. It is a necessary part of systems used by ships to navigate. We also use it in cars and on smartphones to know where we are and where we are going.

The current model was expected to be accurate until 2020. But the magnetic pole began to shift so quickly, scientists realised in 2018 that the model had to be fixed — now.

“They realised that it was so inaccurate that it was about to exceed the acceptable safe limit for navigational errors,” *Nature* (magazine) reports.

It could be dangerous if planes and ships are navigating using a model that is inaccurate.

Every year, geophysicists from the United States and Great Britain check how the Earth’s magnetic field is changing. This is necessary as the liquid iron in the Earth’s core does not move in a consistent way.

The movement of the magnetic North Pole has been studied since 1831. In the beginning, it was moving into the Arctic Ocean at a rate of about 15km each year. Since the mid-1990s, it has sped up. It’s now shifting about 55km a year.

Nobody knows why the magnetic field is shifting so much.

Earth also has geographic north and south poles. Imagine a massive axis passing through the centre of Earth from the north to the south geographic poles. The Earth spins in space on this imaginary axis. The geographic poles are near the magnetic north and south poles. But they are not exactly in the same place.

*Based on articles from the News Corp Australia network*

Assignment 2

Read the text. Connect the words and expressions that have the same meaning in the text.

|  |  |
| --- | --- |
| 1. navigational | 1. *causes something to change direction and move away* |
| 1. inaccurate | 1. *energy sent out from something* |
| 1. deflects | 1. *to find the way to get to a place when you are travelling in a ship, car, etc.* |
| 1. radiation | 1. *to go above or beyond* |
| 1. atmosphere | 1. *the imaginary straight line that something turns around* |
| 1. to navigate | 1. *the layer of gases around Earth and other planets* |
| 1. to exceed | 1. *not correct or exact* |
| 1. geophysicists | 1. *the same all the time* |
| 1. consistent | 1. *scientists studying the energy of the Earth* |
| 1. axis | 1. *used for finding the way* |

Assignment 3

a Choose the best summary.

1 Scientists from all around the world are working together to save Earth’s magnetic North Pole.

2 The Earth’s magnetic field is going faster and faster and could spin out of control.

3 The Earth’s magnetic North Pole is moving so fast that it is affecting modern navigation systems.

4 The giant ball of iron in the centre of the Earth has become so hot that it could explode.

b What unusual decision did experts take?

1 They will change the World Magnetic Model for the first time since 1831.

2 They will start working from Siberia instead of Canada.

3 They will update the World Magnetic Model much earlier than planned.

4 They will work together with scientists all over the world for the first time.

c Why have the experts taken this unusual decision?

1 So that future geophysicists can check how the Earth’s magnetic field is changing.

2 So that modern navitation systems are safe and reliable.

3 To fix some mistakes that should have been fixed in the 1990s.

4 To meet the demands of the smartphone companies.