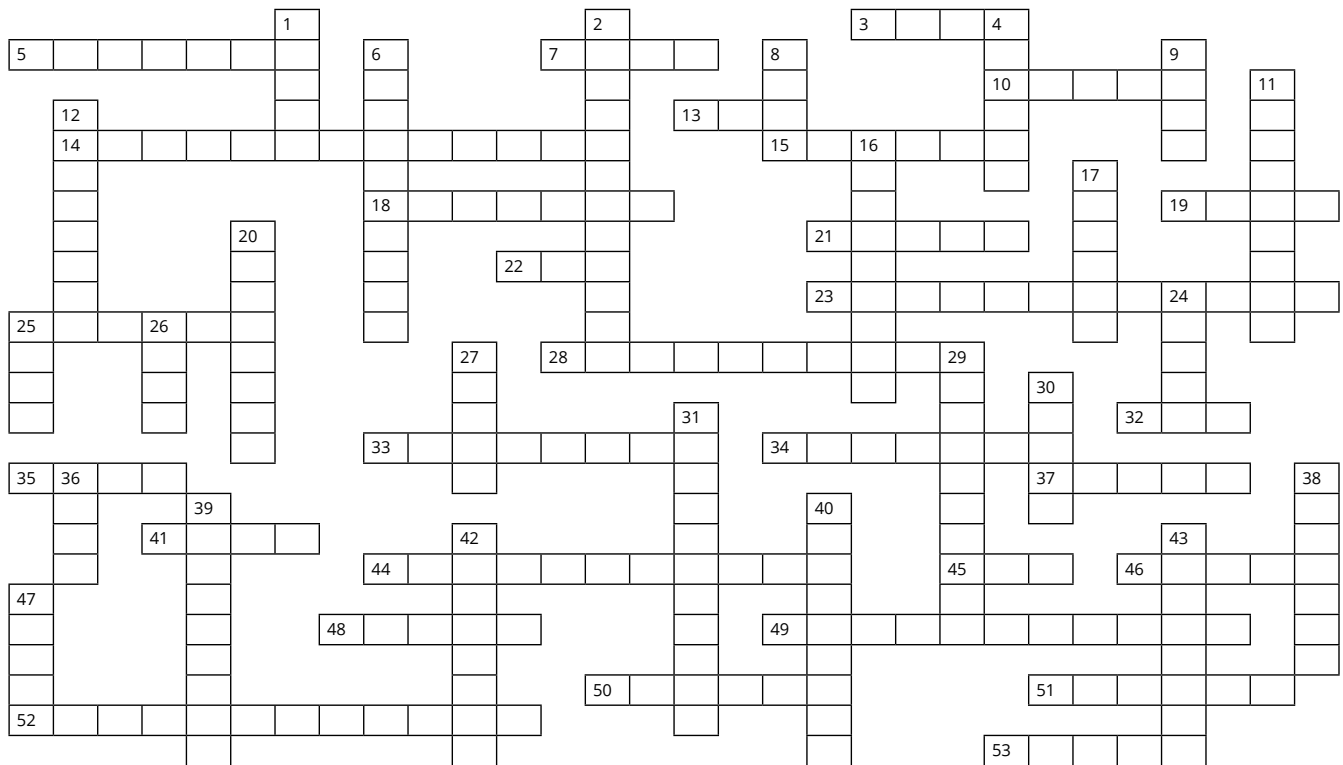


# Test your knowledge

All of the answers can be found in this issue of *Quest*



## ACROSS

- 3 Acronym for device using ultrasonic signals to detect breaks in rail tracks
- 5 The South Atlantic \_\_\_ is a weak spot in the Earth's magnetic field
- 7 Magnetite is a form of \_\_\_ oxide with magnetic properties
- 10 A type of particle that is identical to the nuclei of helium atoms
- 13 Acronym for the largest accelerator at iThemba LABS
- 14 The University of Pretoria's Faculty of Veterinary Science is based here
- 15 A bird famous for being a brood parasite, fooling other species into raising its young
- 18 Arrays of permanent magnets used in the Inductrack system
- 19 Acronym for a type of imaging that measures brain activity
- 21 A time-domain system used in electromagnetic surveys to map geological features
- 22 Acronym for a magnetoresistance effect used in hard disk drives
- 23 Plants that can dry out almost completely and spring back to life when watered
- 25 The Kalahari \_\_\_ represents the ancient landmass of southern Africa
- 28 The branch of the Earth Sciences that uses physics to study the subsurface
- 32 A data analytics company offering internships to South African graduates
- 33 An innovative mode of rail transport used during the South African War
- 34 Japan's record-holding train uses an electro\_\_\_ suspension system
- 35 This falcon has the longest migration of any raptor worldwide

- 37 The \_\_\_-hand rule helps us learn about electromagnetism
- 41 A sheet of rock that cuts through the layering of adjacent rocks
- 44 Advanced electronics making use of the spin of electrons
- 45 Acronym for Africa's first 'home-grown' locomotive
- 46 The Higgs \_\_\_ is a fundamental particle confirmed to exist in 2012
- 48 The frame carrying the wheels underneath a train carriage
- 49 A global network of observatories monitoring the Earth's magnetic field
- 50 A subatomic particle with a positive charge in the nucleus of every atom
- 51 Used as a coolant for superconducting magnets
- 52 Substances that can protect cells from damage
- 53 An excited state of carbon-12, involved in the creation of carbon in stars

## DOWN

- 1 Bird nests and termite mounds are examples of extended pheno\_\_\_
- 2 A protein found in the eyes of birds, involved in navigation
- 4 A SpaceX vehicle for carrying cargo and astronauts to the International Space Station
- 6 Carbon dioxide is an example of a \_\_\_ gas causing global warming
- 8 Acronym for the United Nations body for assessing the science related to climate change
- 9 The radical \_\_\_ mechanism is thought to facilitate magnetoreception in birds

- 11 A proposed high-speed transportation system involving pods in low-pressure tubes
- 12 The Hadron \_\_\_ is the world's most powerful particle accelerator
- 16 Refers to temperatures that are ultra-cold
- 17 A transportation system that uses magnetism to 'float' above the track
- 20 The South African-born innovator behind The Boring Company
- 24 A unit of measurement for magnetic field strength
- 25 The European Organisation for Nuclear Research
- 26 Nickname for the London Underground train system
- 27 The European Space Agency's satellite constellation measuring the Earth's magnetic field
- 29 An interactive platform to explore science, technology, engineering and mathematics
- 30 The \_\_\_ climate in burrows may be very different from the above-ground surroundings
- 31 The amount of deviation of a compass needle from true north
- 36 A type of computer memory that uses a magnetoresistance cell to store data
- 38 The Earth's current polarity interval that started 780 000 years ago
- 39 An accelerator that propels charged particles in a circular path
- 40 MRI stands for magnetic \_\_\_ imaging
- 42 The higher a particle's \_\_\_, the more difficult it is to change its direction
- 43 Rock formed from magma that flowed up from deep within the Earth
- 47 South Africa's government agency that monitors space weather

For magnetism-related games, demos, lesson plans and more, check out the Magnet Academy, brought to you by the National High Magnetic Field Laboratory in the United States.

<https://nationalmaglab.org/education/magnet-academy/>