



APEX ENGLISH

Your voice. Global.

B2 · GENERAL ENGLISH

UNIT 10 · 10A

Science fact, science fiction

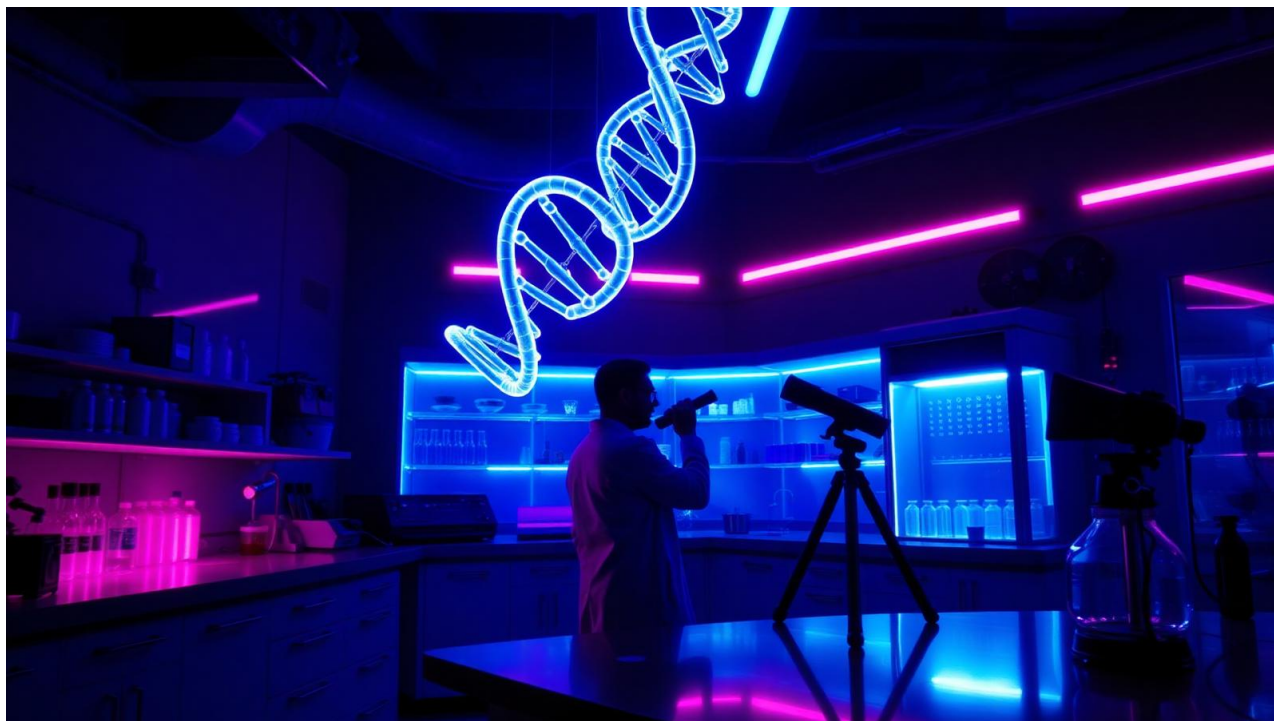
Theme · Future Frontiers



Unit 10 · 10A

Science fact, science fiction

Theme: Future Frontiers



Learning objectives

- Use quantifiers ALL, EVERY, EACH, BOTH, EITHER, NEITHER, NONE, NO, MOST with correct verb agreement.
- Distinguish ALL / EVERY / EACH and BOTH / EITHER / NEITHER in real contexts.
- Use vocabulary of science & discovery: research, experiment, discover / discovery / discoverer, invent / invention / inventor, cure, breakthrough, launch, prove.
- Predict stress shifts inside a word family (PHOtograph → phoTOgrapher → photoGRaphic).
- Talk about which sci-fi predictions actually came true — and which never will.

Ask the teacher — notes to bring to class



Class Book

Warm-up · science fact or science fiction?

Read each 'future prediction' below. In pairs, decide: is it **FACT** (it exists now), **FICTION** (still imaginary), or **SOON** (within 10 years)?

A pill that lets you learn a language in a week.

A robot surgeon that operates with better accuracy than any human.

A tourist trip around the Moon that ordinary people can book online.

A weather forecast that is 99% accurate seven days ahead.

A cure for every type of cancer.

A translator earpiece that lets two strangers talk in different languages in real time.

followUp: Listen to your partners — how many of them said 'ALL of these will happen' vs 'NONE of these will happen'? Those are today's quantifiers.

Lead-in: match the invention to the year

In pairs, match each real scientific breakthrough on the **LEFT** to the year on the **RIGHT**. Be brave — guess before you check.

- A. The first successful heart transplant
- B. The launch of the James Webb Space Telescope
- C. The first mRNA vaccine approved for humans
- D. The first photograph of a black hole
- E. The publication of the human genome
- F. The first crewed landing on the Moon

1 · 1969

2 · 1967

3 · 2003

4 · 2019

5 · 2020

6 · 2021

A → 2 · 1967 (Christiaan Barnard, South Africa)

B → 6 · 2021 (Christmas Day launch)

C → 5 · 2020 (COVID-19 vaccines)

D → 4 · 2019 (Event Horizon Telescope)

E → 3 · 2003 (Human Genome Project completed)

F → 1 · 1969 (Apollo 11)

Ask the teacher — notes to bring to class



followUp: Twist question: which of these breakthroughs did NONE of us predict correctly? Which did ALL of us know?

Reading: 'five predictions that came true — and five that didn't'

In 1968, the writer Arthur C. Clarke described a small handheld device that would let people read newspapers from anywhere in the world, receive messages instantly, and watch moving pictures on a bright screen. He called it a 'newspad'. He was, of course, describing the smartphone — thirty years before anyone actually built one. Most of Clarke's other predictions came true too: satellite communications, the personal computer, video calls. He got the timing almost right.

Not every science-fiction prediction has aged so well. Both writers and scientists in the 1960s promised us flying cars by the year 2000, colonies on Mars by 2010, and a cure for every disease by 2020. None of those has happened. All of them are still 'coming soon'. Meanwhile, nobody in 1968 predicted that the biggest technological change of the 21st century would be a piece of glass in your pocket that shows you videos of strangers dancing.

The pattern is clear. Predictions about MACHINES tend to be too optimistic: we thought we would have robot butlers and personal jetpacks by now. Predictions about SOFTWARE and INFORMATION tend to be too PESSIMISTIC: none of the great writers of the 1960s imagined a single company knowing what four billion people had for breakfast. Every generation of scientists gets some of it right, some of it wrong — and almost none of it in the order they expected.

What no science-fiction writer of the 20th century really predicted was the speed of biological discovery. In just three years — 2020 to 2023 — the world designed, tested, produced and delivered several new vaccines to billions of people, decoded the structure of nearly every human protein with AI, and began human trials of gene-editing cures for sickle cell and blindness. Every one of these was, until very recently, pure science fiction.

1. What was Arthur C. Clarke's 'newspad'?
 - (A) An early laptop
 - (B) A device that predicted the smartphone
 - (C) A satellite
2. According to the text, predictions about MACHINES have been...
 - (A) too pessimistic
 - (B) too optimistic
 - (C) roughly correct
3. What TYPE of prediction has been TOO pessimistic?
 - (A) Machines
 - (B) Software & information
 - (C) Space travel

Ask the teacher — notes to bring to class



4. How does the text describe the pace of biological science 2020–2023?
- (A) Slower than expected
 - (B) Faster than any science-fiction writer imagined
 - (C) About the same as the 1960s
5. Which sentence best summarises the text?
- (A) All predictions come true eventually.
 - (B) Every prediction about the future turns out to be wrong.
 - (C) We tend to overestimate machines and underestimate information.

Science vocabulary in context

Match each word from the text with its closest meaning.

prediction — a statement about what will happen in the future

breakthrough — an important sudden progress or discovery

trial — a scientific test, especially of a treatment on people

decode — to work out the structure or meaning of something

gene-editing — changing the DNA inside a living organism

colony — a group of people living permanently in a new place

Vocabulary: science, discovery & invention

intro: Science vocabulary lives in FAMILIES — one root produces a verb, a noun (thing), a noun (person) and an adjective. Learn them together and you'll double your fluency this lesson.

1. **label:** Word families — the four columns

2. **label:** Science verbs — what scientists DO

3. **label:** Big science nouns

4. **label:** Adjectives to describe research

practice

Complete each sentence with ONE word from the box (correct form). One word per gap.

Ask the teacher — notes to bring to class



1. The team spent ten years to ____ a vaccine for the virus.

2. Marie Curie was the first person to win two Nobel Prizes for her ____ into radioactivity.

3. The James Webb Space Telescope was ____ on Christmas Day, 2021.

4. This paper hasn't been ____ yet — three other labs still need to check it.

5. Alexander Fleming's ____ of penicillin in 1928 changed medicine forever.

6. The results of the first ____ were disappointing, but the second one worked.

7. AI is now used to ____ millions of images faster than any human could.

8. For decades, scientists tried to ____ that the theory was correct.

Practice 2 — collocations & rewrite

Rewrite each sentence replacing the underlined phrase with ONE word from this lesson's vocabulary. Keep the meaning identical.

1. The lab's <u>groundbreaking</u> work redefined the whole field.

2. The topic remains <u>strongly disputed</u> among scientists.

3. The first results were <u>unclear and inconclusive</u>.

4. A good experiment must be <u>repeatable</u> by other scientists</u>.

5. It took a decade to <u>create through careful, sustained research</u> the new vaccine.

Practice 3 — discursive writing

prompt: Reflect on a scientific or technological breakthrough you find most exciting — and what risks might come with it.

Ask the teacher — notes to bring to class



Use at least FOUR of the target words from this unit.

Vary sentence length and use one relative clause.

Aim for a reflective, cohesive C1 register.

sample: Few areas of science feel as genuinely pioneering to me as gene-editing, which has moved, within a single decade, from theory to real treatment. What makes the field contentious, however, is exactly how fast it is moving: results that seemed indeterminate a few years ago are now being cited as evidence for cures once thought impossible. I find it reassuring that responsible labs insist on replicable outcomes before making any public claim, rather than rushing to announce a breakthrough. At the same time, I worry about how easily new tools could be used to engineer changes we haven't fully understood the consequences of. Excitement and caution, in this case, don't feel like opposites — they feel like two halves of the same reasonable response.



Grammar: quantifiers — all, every, each, both, either, neither, none

1. ALL — 'the total group' (plural verb) — ALL is followed by a plural or uncountable noun, and takes a PLURAL verb. • All experiments FAIL sometimes. • All (of) the results ARE in. • All (of) the information IS on the website. (uncountable → singular verb)

2. EVERY / EACH — 'every one, one by one' (singular verb) — EVERY and EACH are followed by a SINGULAR noun and a SINGULAR verb. • Every prediction WAS wrong. (NOT 'were wrong') • Each scientist HAS a different theory. • Difference: EVERY = 'all of them, thought of as a group'; EACH = 'one by one, individually'. • EVERY needs 3+ items; EACH can be 2+.

3. BOTH — 'the two of them' (plural) — BOTH is used for TWO things and takes a PLURAL verb. • Both theories ARE interesting. • Both (of) the astronauts SURVIVED. Position with the verb 'be': the noun/pronoun goes first: 'The results are both surprising.' / 'They are both scientists.'

Ask the teacher — notes to bring to class



4. EITHER / NEITHER — 'one of two' / 'not one of two' (singular) — EITHER = 'one or the other of two' (singular verb). NEITHER = 'not one and not the other of two' (formally singular). • Either theory IS possible. • Neither experiment WAS successful. ■ In spoken English, 'neither of us HAVE been' is very common — but in writing, use IS/HAS.

5. NONE / NO — 'zero' (singular OR plural) — NO + noun = 'not any' (usually singular verb with singular noun, plural with plural noun). NONE (OF) + plural noun = plural OR singular verb (both accepted; plural is more natural in speech). • No student HAS finished. / No students HAVE finished. • None of the experiments HAVE worked. / None of the experiments HAS worked. ✗ 'I don't have no time.' (double negative) → ✓ 'I have NO time / I don't have ANY time.'

6. MOST — 'the majority' (plural / uncountable) — MOST + plural / uncountable noun. • Most scientists AGREE with the theory. • Most (of the) research SUPPORTS the idea. ■ 'Most of the' (with THE) points to a specific group; 'Most' alone is general.

Exercise A — pick the correct quantifier

Choose ALL, EVERY, EACH, BOTH, EITHER, NEITHER, NONE or NO.

1. ____ scientist in the lab has their own project.
(A) Every
(B) All
(C) Both
2. ____ of the two theories has been proved yet.
(A) Neither
(B) None
(C) No
3. There are two candidates and I like ____ of them.
(A) either
(B) neither
(C) both
4. ____ the results were ready by Friday.
(A) Every
(B) Each
(C) All
5. ____ of the ten experiments has produced clear evidence.
(A) No
(B) None
(C) Every

Ask the teacher — notes to bring to class



6. There's ____ time to run another trial before the deadline.
(A) no
(B) none
(C) any
7. The two labs are working together and ____ have published papers.
(A) either
(B) both
(C) each
8. ____ prediction Clarke made about screens turned out to be correct.
(A) Every
(B) All
(C) Both

Exercise B — spot & fix the mistake

Each sentence has ONE mistake. Rewrite it correctly.

1. Every scientists in the room agreed.

2. All the information are online.

3. Neither of the two theories are correct.

4. I don't have no funding for this project.

5. Both of experiments failed.

6. Most of scientists agree on climate change.

7. None of the results was a surprise.

8. Each of the astronauts have their own capsule.

Exercise C — rewrite with a quantifier

Rewrite each sentence using the quantifier in brackets.

Ask the teacher — notes to bring to class



1. Not one of the ten predictions was right. (NONE)

2. The two astronauts came back safely. (BOTH)

3. There isn't a single result yet. (NO)

4. 100% of the students passed. (ALL)

5. Considered one by one, the labs are different. (EACH)

6. The majority of the research supports the theory. (MOST)

Exercise D — a science-news gap-fill

Complete the text with **ONE** word from the box (each used once).

Word bank: every · all · both · each · neither · none · no · most · either · any

In 2023, a small British startup and a much larger American lab announced, on almost the same day, that they had made progress on a room-temperature superconductor. (1) ___ teams claimed a breakthrough; (2) ___ of them had, so far, been able to reproduce the result. Independent scientists tried to repeat the experiment in fourteen laboratories around the world. (3) ___ single one succeeded.

That, however, isn't the end of the story. (4) ___ scientist working in condensed-matter physics agrees: a real superconductor at room temperature would change (5) ___ major industry on Earth — from energy to transport to medicine. So (6) ___ month, at least one new paper appears on the topic, and (7) ___ of the recent ones are more careful than the previous wave. There is still (8) ___ proof, but there is (9) ___ ongoing hope and serious money. As (10) ___ of the researchers told the BBC last week: 'One of these attempts, sooner or later, is going to work.'

Both

neither

No

Every

every

each

most

no

either

Ask the teacher — notes to bring to class



one

Listening: 'the podcast — one prediction that came true, one that didn't'

Two guests on a science podcast — Dr Ana Ribeiro, a British astrophysicist, and Marcus Chen, a Californian science-fiction novelist — debate one prediction that came true and one that didn't. Two clearly different voices, no name-introductions in the audio.

Before you listen

Predict: which single prediction do you think the SCIENTIST will say came true?

Predict: which prediction do you think the NOVELIST will say still hasn't come true?

First listen — gist

1. What is the topic of the podcast episode?

2. Which prediction does the SCIENTIST celebrate as 'really having come true'?

3. Which prediction does the NOVELIST complain about?

Second listen — detail

1. According to the scientist, how far off was Clarke about the smartphone?

2. Why does the novelist say flying cars will 'probably never' be everyday transport?

3. What TWO recent predictions have both guests been surprised by?

4. What does the scientist say science-fiction writers usually GET WRONG?

Ask the teacher — notes to bring to class



5. What ONE prediction does the novelist say she now regrets writing?

6. How do they end the episode?

A: OK — let's start with the fun question. One prediction from twentieth-century science fiction that really came true. Ana, you first.

B: Easy. The smartphone. Arthur C. Clarke, 1968, described a small handheld device with a bright screen — you could read newspapers on it from anywhere, receive messages instantly, watch moving pictures. He was off by about thirty years, but essentially every detail was correct.

A: Every detail?

B: Every important one. Portability, brightness, instant news, video. All of it. What he couldn't predict was that most of us would use it to send each other pictures of our lunch.

A: Fair. My turn — one prediction that didn't come true, and probably never will. Flying cars.

B: Oh, the flying car — every sci-fi film since 1962 has promised us the flying car.

A: Every single one. And none of them will ever fly, honestly, as everyday transport. The physics is against them. A small flying vehicle uses roughly twenty times more energy per kilometre per passenger than a road car. Neither the batteries nor the fuel exists to make it work at scale.

B: That is a very sad sentence for anyone who grew up reading Isaac Asimov.

A: It is. But — and this is the good news — both of us have been surprised in the other direction too. Neither of us predicted, ten years ago, that we would have gene-editing cures for sickle cell disease and inherited blindness in actual patients by 2024.

B: Nor that an AI system would write and code as well as most professionals. All the writers I know are quietly panicking.

A: That's the pattern. Every generation of sci-fi writers overestimates the hardware — the jetpacks, the humanoid robots, the flying cars — and underestimates the software. Nobody in 1968 predicted the search engine. Nobody predicted the social network. Nobody predicted the AI that writes essays.

B: Confession time — I wrote a novel in 2005 where every home has a personal humanoid robot doing the dishes by 2020. None of that has happened. Not one of the robots we promised is actually useful. I regret every page of that book.

A: Don't regret it. That's what sci-fi is FOR — to be gloriously, expensively wrong, so that reality can surprise us in a completely different direction.

B: So — final question. Where's the NEXT big surprise coming from? Space? AI?

Ask the teacher — notes to bring to class



A: Biology. Every serious scientist I know says the same. Not from space, not from robotics — from biology. Both of us should be paying attention.

B: Agreed. Biology it is. Thanks, Ana. That's our episode.

Speaking: 'the 2050 prediction game'

In pairs, make FIVE predictions for the world in 2050. You MUST use: (a) THREE quantifiers (all / every / most / none / both / neither), (b) TWO science-family words (discovery / researcher / technological...), (c) ONE 'still' or 'no longer' to show change over time.

1. **label:** Health · **hint:** 'By 2050, most cancers will be...', 'All new medicines will...'

2. **label:** Space · **hint:** 'Every year, we will...', 'Neither Mars nor the Moon will still be...'

3. **label:** AI · **hint:** 'No student will still write essays by hand because...'

4. **label:** Climate · **hint:** 'Most cities will have...', 'Both energy and transport will...'

5. **label:** Daily life · **hint:** 'None of us will still use...', 'Every home will have...'

example: By 2050, most of the common cancers will have a cure. Every child will be vaccinated against malaria at birth. Both electric and hydrogen cars will be normal, and none of us will still use petrol on a daily basis. Every big city will have a low-emission zone, and neither London nor São Paulo will still allow diesel in the centre. No student will hand-write an essay any more — every one of them will co-write with an AI, and that will be completely normal. And, honestly, one groundbreaking discovery none of us can yet predict will change everything.

challenge: ■ Extra ■ if you sneak in a word family (discover / discovery / discoverer) AND 'neither X nor Y' in the same prediction.

Writing mini-task — 'a prediction for 2050' (120–150 words)

Write a short prediction essay: (1) one paragraph on what WILL happen by 2050, (2) one paragraph on what will NOT have happened. Use at least THREE quantifiers, TWO word-family items and ONE 'either / neither' structure.

Wrap-up · three finish-the-sentence prompts

Pick ONE and finish it out loud. Class votes on the boldest prediction.

Ask the teacher — notes to bring to class



1. **label:** Prompt 1 — the confident prediction · **prompt:** By 2050, every... because...

2. **label:** Prompt 2 — the safe bet · **prompt:** None of us will still... by 2035, and that's because...

3. **label:** Prompt 3 — the wild card · **prompt:** One discovery neither science nor fiction has predicted yet is...

Ask the teacher — notes to bring to class



Workbook — home practice



Ask the teacher — notes to bring to class

Science fact, science fiction - Workbook

Extra practice for home study · with answer keys

1. Vocabulary - science word families

Choose the word that fits best.

1. Marie Curie is famous for her ____ of two new elements.
(A) discover
(B) discovery
(C) discoverer
(D) discovered
2. The lab has published a series of ____ papers this year.
(A) research
(B) researcher
(C) researched
(D) researching
3. Every ____ in the field respects her theoretical work.
(A) science
(B) scientist
(C) scientific
(D) sciences
4. The results are still ____; we need more data.
(A) conclusive
(B) inconclusive
(C) conclusion
(D) concluded
5. Alan Turing was one of the great ____ of the 20th century.
(A) invent
(B) invention
(C) inventors
(D) inventive
6. This is genuinely ____ research - it will change the field.
(A) ground
(B) grounded
(C) groundbreaking
(D) grounding

2. Vocabulary - gap-fill (science verbs & nouns)

Complete each sentence with ONE word from the box (no changes).

BOX: deploy · engineered · remedy · appraisal · conjecture · vetted

1. The paper has been ____ by three independent scientists.
2. SpaceX will ____ the satellite from Cape Canaveral on Tuesday.
3. Nobody knows if it works yet - the clinical ____ starts in June.
4. So far there is no ____ for the disease, only treatments.

5. Her ____ was simple: sleep improves memory. She then spent ten years proving it.
6. The vaccine was ____ in just eleven months.

2b. Vocabulary - discursive writing

Write 120-180 words: 'Scientific breakthroughs often bring ethical dilemmas that society is unprepared to solve. Discuss the responsibility of researchers and inventors.'

Checklist:

- [] Use target lexis from the science word family and verb sections
- [] Use varied C1-level grammar (e.g. quantifiers and either/neither)
- [] Ensure logical cohesion and smooth transitions
- [] Maintain a formal or semi-formal academic register

[illegible]

3. Grammar - pick the right quantifier

Choose ALL, EVERY, EACH, BOTH, EITHER, NEITHER, NONE or NO.

1. ____ scientist in the lab has a different specialism.
(A) Every
(B) All
(C) Both
2. ____ of the two theories has really been proved.
(A) Neither
(B) None
(C) No
3. There are only two candidates and ____ of them is qualified.
(A) either
(B) neither
(C) both

4. ____ (of) the results were ready by Friday.
(A) Every
(B) Each
(C) All
5. ____ of the ten trials has produced a positive result.
(A) No
(B) None
(C) Every
6. There's ____ time to run another test before the deadline.
(A) no
(B) none
(C) any
7. The two studies agree - ____ show the same effect.
(A) either
(B) both
(C) each
8. ____ prediction Clarke made about screens turned out to be right.
(A) Every
(B) All
(C) Both

4. Grammar - spot & fix the mistake

Each sentence has ONE mistake. Rewrite it correctly.

1. Every scientists in the room agreed.
2. All the information are on the website.
3. Neither of the two theories are correct.
4. I don't have no funding for this project.
5. Both of experiments failed.
6. Most of scientists agree on climate change.
7. None of the results was a surprise.
8. Each of the astronauts have their own capsule.

5. Word building - form the noun / adjective / verb

Write the correct form of the word in CAPS.

1. SCIENCE → adjective: 'It is a ____ fact, not an opinion.'
2. TECHNOLOGY → adjective: 'A ____ breakthrough.'
3. DISCOVER → noun (person): 'The ____ of penicillin was Alexander Fleming.'
4. INVENT → adjective: 'Edison was a very ____ engineer.'
5. ANALYSE → noun (thing): 'The final ____ took six weeks.'
6. PROVE → noun: 'There is no ____ that the theory is correct.'
7. EXPLORE → adjective: 'The study was purely ____.'
8. COMMUNICATE → adjective: 'She's a very ____ speaker.'

8. Listening - 'the science-podcast bonus round'

Read the transcript (audio coming soon - two clearly different voices, no name-introductions). Answer the questions.

Audio: Podcast host (Voice A) and guest neuroscientist (Voice B)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

9. ■ Challenge - sentence transformation

Rewrite each sentence using the WORD in brackets, keeping the meaning.

1. 1. 'Not one of the ten trials was successful.' → ___ of the ten trials ___ successful. (NONE)
2. 2. 'The two theories are equally interesting.' → ___ theories ___ equally interesting. (BOTH)
3. 3. 'Considered one by one, the astronauts are experts.' → ___ astronaut ___ an expert. (EACH)
4. 4. 'The majority of experts agree.' → ___ experts ___. (MOST)
5. 5. '100% of the data supports the theory.' → ___ the data ___ the theory. (ALL)
6. 6. 'Not this option, and not that one either.' → ___ option ___ acceptable. (NEITHER)

10. ■ Challenge - where's the stress?

Choose the correct stress pattern. Then reveal the answer.

1. science → scientific
(A) SCIENTific
(B) scienTIfic
(C) scienTIfIC
2. photograph → photographer
(A) PHOTographer
(B) phoTOgrapher
(C) photoGRAPHer
3. discover → discovery
(A) DIScovery
(B) disCOvery
(C) discoVEry
4. analyse → analysis
(A) ANalysis
(B) aNALysis
(C) anaLYsis
5. technology → technological
(A) TECHnological
(B) techNOlogical

(C) technoLOgical

6. economy → economical

(A) ECONomical

(B) eCONomical

(C) ecoNOMical

11. Self-check

Tick what you can now do confidently.

☐ I use EVERY / EACH with a singular verb.

☐ I use ALL / BOTH / MOST / NONE (usually) with a plural verb.

☐ I know that NEITHER is formally singular but plural in casual speech.

☐ I never say 'I don't have no time' - I say 'I have NO time' or 'I don't have ANY time'.

☐ I can build a full science word family: discover → discovery → discoverer → discovered.

☐ I know that -ION and -ITY pull the stress ONE syllable back.

Science fact, science fiction — Workbook

Extra practice for home study · with answer keys

1. Vocabulary — science word families

Choose the word that fits best.

1. Marie Curie is famous for her ____ of two new elements.
(A) discover
(B) discovery
(C) discoverer
(D) discovered
2. The lab has published a series of ____ papers this year.
(A) research
(B) researcher
(C) researched
(D) researching
3. Every ____ in the field respects her theoretical work.
(A) science
(B) scientist
(C) scientific
(D) sciences
4. The results are still ____; we need more data.
(A) conclusive
(B) inconclusive
(C) conclusion
(D) concluded
5. Alan Turing was one of the great ____ of the 20th century.
(A) invent
(B) invention
(C) inventors
(D) inventive
6. This is genuinely ____ research — it will change the field.
(A) ground
(B) grounded
(C) groundbreaking
(D) grounding

2. Vocabulary — gap-fill (science verbs & nouns)

Complete each sentence with ONE word from the box (no changes).

BOX: deploy · engineered · remedy · appraisal · conjecture · vetted

1. The paper has been ____ by three independent scientists.
2. SpaceX will ____ the satellite from Cape Canaveral on Tuesday.
3. Nobody knows if it works yet — the clinical ____ starts in June.
4. So far there is no ____ for the disease, only treatments.

5. Her ____ was simple: sleep improves memory. She then spent ten years proving it.
6. The vaccine was ____ in just eleven months.

2b. Vocabulary — discursive writing

Write 120–180 words: 'Scientific breakthroughs often bring ethical dilemmas that society is unprepared to solve. Discuss the responsibility of researchers and inventors.'

Checklist:

- Use target lexis from the science word family and verb sections
- Use varied C1-level grammar (e.g. quantifiers and either/neither)
- Ensure logical cohesion and smooth transitions
- Maintain a formal or semi-formal academic register

[illegible]

3. Grammar — pick the right quantifier

Choose ALL, EVERY, EACH, BOTH, EITHER, NEITHER, NONE or NO.

1. ____ scientist in the lab has a different specialism.
(A) Every
(B) All
(C) Both
2. ____ of the two theories has really been proved.
(A) Neither
(B) None
(C) No
3. There are only two candidates and ____ of them is qualified.
(A) either
(B) neither
(C) both

Ask the teacher — notes to bring to class

4. ____ (of) the results were ready by Friday.
(A) Every
(B) Each
(C) All
5. ____ of the ten trials has produced a positive result.
(A) No
(B) None
(C) Every
6. There's ____ time to run another test before the deadline.
(A) no
(B) none
(C) any
7. The two studies agree — ____ show the same effect.
(A) either
(B) both
(C) each
8. ____ prediction Clarke made about screens turned out to be right.
(A) Every
(B) All
(C) Both

4. Grammar — spot & fix the mistake

Each sentence has ONE mistake. Rewrite it correctly.

1. Every scientists in the room agreed.
2. All the information are on the website.
3. Neither of the two theories are correct.
4. I don't have no funding for this project.
5. Both of experiments failed.
6. Most of scientists agree on climate change.
7. None of the results was a surprise.
8. Each of the astronauts have their own capsule.

5. Word building — form the noun / adjective / verb

Write the correct form of the word in CAPS.

1. SCIENCE → adjective: 'It is a ____ fact, not an opinion.'
2. TECHNOLOGY → adjective: 'A ____ breakthrough.'
3. DISCOVER → noun (person): 'The ____ of penicillin was Alexander Fleming.'
4. INVENT → adjective: 'Edison was a very ____ engineer.'
5. ANALYSE → noun (thing): 'The final ____ took six weeks.'
6. PROVE → noun: 'There is no ____ that the theory is correct.'
7. EXPLORE → adjective: 'The study was purely ____.'
8. COMMUNICATE → adjective: 'She's a very ____ speaker.'

6. Reading — true / false / not given

Read the short text and mark each statement T, F or NG.

In 1961, President Kennedy promised that the United States would put a man on the Moon before the end of the decade. Most experts thought the timeline was ridiculous. All the technology needed to reach the Moon still had to be invented — new rockets, new life-support systems, new computers small enough to fit in a spacecraft. Neither the private companies nor the universities of the time were ready for a project on that scale. And yet, on 20 July 1969, Neil Armstrong stepped onto the lunar surface, and by 1972 twelve Americans in total had walked there. None of the six missions ended in disaster in space, although Apollo 13 came dangerously close. Since then, no human being has returned to the Moon. New missions are planned for the late 2020s, but none has yet launched.

1. Most experts in 1961 thought Kennedy's timeline was realistic. [T / F / NG]
2. New computers had to be developed for the missions. [T / F / NG]
3. Neil Armstrong was the first person to walk on the Moon. [T / F / NG]
4. Exactly six missions successfully reached the Moon. [T / F / NG]
5. Apollo 13 astronauts died in space. [T / F / NG]
6. The name of the first woman to walk on the Moon is mentioned. [T / F / NG]

7. Writing — a prediction essay for 2050 (120–150 words)

Write a short prediction essay. Paragraph 1: what WILL have happened by 2050. Paragraph 2: what will NOT have happened. Use at least THREE quantifiers, TWO word-family items, and ONE 'either / neither' structure.

Checklist:

- 120–150 words
- 3+ quantifiers (every / all / most / none / neither...)
- 2+ word-family items (discovery, groundbreaking, technological, scientist...)
- 1 'either / neither' structure
- Two paragraphs: WILL happen · will NOT happen

[illegible]

Ask the teacher — notes to bring to class

8. Listening — 'the science-podcast bonus round'

Read the transcript (audio coming soon — two clearly different voices, no name-introductions). Answer the questions.

■ **Audio:** Podcast host (Voice A) and guest neuroscientist (Voice B)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

9. ■ Challenge — sentence transformation

Rewrite each sentence using the WORD in brackets, keeping the meaning.

1. 1. 'Not one of the ten trials was successful.' → ___ of the ten trials ___ successful. (NONE)
2. 2. 'The two theories are equally interesting.' → ___ theories ___ equally interesting. (BOTH)
3. 3. 'Considered one by one, the astronauts are experts.' → ___ astronaut ___ an expert. (EACH)
4. 4. 'The majority of experts agree.' → ___ experts ___. (MOST)
5. 5. '100% of the data supports the theory.' → ___ the data ___ the theory. (ALL)
6. 6. 'Not this option, and not that one either.' → ___ option ___ acceptable. (NEITHER)

10. ■ Challenge — where's the stress?

Choose the correct stress pattern. Then reveal the answer.

1. science → scientific
(A) SCIENTific
(B) scienTIfic
(C) scienTIfIC
2. photograph → photographer
(A) PHOTographer
(B) phoTOgrapher
(C) photoGRAPHer
3. discover → discovery
(A) DIScovery
(B) disCOvery
(C) discoVEry
4. analyse → analysis
(A) ANalysis
(B) aNALysis
(C) anaLYsis
5. technology → technological
(A) TECHnological
(B) techNOlogical

(C) technoLOgical

6. economy → economical

(A) ECONomical

(B) eCONomical

(C) ecoNOMical

11. Self-check

Tick what you can now do confidently.

- I use EVERY / EACH with a singular verb.
- I use ALL / BOTH / MOST / NONE (usually) with a plural verb.
- I know that NEITHER is formally singular but plural in casual speech.
- I never say 'I don't have no time' — I say 'I have NO time' or 'I don't have ANY time'.
- I can build a full science word family: discover → discovery → discoverer → discovered.
- I know that -ION and -ITY pull the stress ONE syllable back.



Answer key — Class Book

Reading: 'five predictions that came true — and five that didn't'

1. (B) A device that predicted the smartphone
2. (B) too optimistic
3. (B) Software & information
4. (B) Faster than any science-fiction writer imagined
5. (C) We tend to overestimate machines and underestimate information.

Vocabulary: science, discovery & invention

1. engineer
 2. research
 3. deployed
 4. vetted
 5. discovery
 6. appraisal
 7. analyse
 8. prove
1. The lab's pioneering work redefined the whole field.
 2. The topic remains contentious among scientists.
 3. The first results were indeterminate.
 4. A good experiment must be replicable.
 5. It took a decade to engineer the new vaccine.

Grammar: quantifiers — all, every, each, both, either, neither, none

1. (A) Every
 2. (A) Neither
 3. (C) both
 4. (C) All
 5. (B) None
 6. (A) no
 7. (B) both
 8. (A) Every
1. Every scientist in the room agreed. (EVERY + singular noun)
 2. All the information IS online. (information = uncountable → singular verb)
 3. Neither of the two theories IS correct. (NEITHER = singular in formal use)
 4. I have NO funding / I don't have ANY funding. (no double negative)
 5. Both (of the) experiments failed. (BOTH OF + THE + plural)
 6. Most scientists agree... / Most OF THE scientists agree... (drop 'of' or add 'the')
 7. None of the results WERE a surprise. (plural is more natural)
 8. Each of the astronauts HAS their own capsule. (EACH = singular verb)
1. None of the ten predictions was/were right.
 2. Both (of the) astronauts came back safely.
 3. There are no results yet.
 4. All (of) the students passed.
 5. Each (of the) labs is different.
 6. Most of the research supports the theory.

Listening: 'the podcast — one prediction that came true, one that didn't'

1. One 20th-century sci-fi prediction that came true, and one that didn't.
 2. The pocket-sized device that connects you to all of human knowledge — the smartphone (Clarke's 'newspad').
 3. The flying car — repeatedly promised since 1962 and still not really here.
1. Off by about thirty years, but essentially correct in every detail — screen, portability, instant news, video.

Ask the teacher — notes to bring to class



2. Because the physics (energy per passenger) is against them — a road car uses roughly 20x less energy per km than a small flying vehicle.
3. Gene-editing cures for previously incurable diseases, and AI systems that write and code as well as most professionals.
4. They overestimate hardware (jetpacks, robot butlers) and underestimate software (search engines, social networks, AI).
5. That everyone would have a personal humanoid robot by 2020 — none of the predicted machines actually became useful.
6. Both agree the next big surprise will come from biology, not from space.

Ask the teacher — notes to bring to class



Answer key — Workbook

Ask the teacher — notes to bring to class

Science fact, science fiction - Workbook — Answer Key

1. Vocabulary - science word families

1. **(B)** *discovery*
2. **(A)** *research*
3. **(B)** *scientist*
4. **(B)** *inconclusive*
5. **(C)** *inventors*
6. **(C)** *groundbreaking*

2. Vocabulary - gap-fill (science verbs & nouns)

1. **vett***ed*
2. **de***ploy*
3. **appr***aisal*
4. **rem***edy*
5. **con***jecture*
6. **engine***ered*

2b. Vocabulary - discursive writing

Sample answer

Every groundbreaking discovery carries with it a weight of responsibility that both the scientist and the inventor must acknowledge. When researchers deploy new technology, they must ensure it has been thoroughly vetted by independent experts. While some projects produce inconclusive results, others may lead to a permanent remedy for a previously incurable disease. However, the appraisal of such work often reveals deep ethical divides. Neither the pursuit of knowledge nor the desire for profit should outweigh the safety of the public. Every conjecture must be backed by rigorous analysis and proof before it is accepted as scientific fact. As we engineer new solutions to global challenges, we must remain aware that technological progress is a double-edged sword. All of us have a stake in how these discoveries are used. Ultimately, science is most effective when it is exploratory yet cautious, ensuring that every breakthrough serves the common good rather than just the interests of a few.

3. Grammar - pick the right quantifier

1. **(A)** *Every*
2. **(A)** *Neither*
3. **(B)** *neither*
4. **(C)** *All*
5. **(B)** *None*
6. **(A)** *no*
7. **(B)** *both*
8. **(A)** *Every*

4. Grammar - spot & fix the mistake

1. *Every scientist in the room agreed. (EVERY + singular)*
2. *All the information IS on the website. (information is uncountable)*
3. *Neither of the two theories IS correct. (formally singular)*
4. *I have NO funding / I don't have ANY funding. (no double negative)*
5. *Both (of the) experiments failed.*
6. *Most scientists agree... / Most OF THE scientists agree...*
7. *None of the results WERE a surprise. (plural is more natural)*
8. *Each of the astronauts HAS their own capsule. (EACH + singular verb)*

5. Word building - form the noun / adjective / verb

1. *scientific*
2. *technological*
3. *discoverer*
4. *inventive*
5. *analysis*
6. *proof*
7. *exploratory*
8. *communicative*

6. Reading - true / false / not given

1. **F**
2. **T**
3. **T**
4. **T**
5. **F**
6. **NG**

7. Writing - a prediction essay for 2050 (120-150 words)

Sample answer

By 2050, most common cancers will have a cure. Every child born in a rich country will be vaccinated at birth against a long list of diseases that killed millions in the twentieth century. Both AI and gene editing will have become normal medical tools, and no serious hospital will still be working without them. None of us will find that surprising by then - it will feel obvious. But some famous predictions will still not have come true. Flying cars will still not be everyday transport, because neither the batteries nor the physics really work. No large city will have been built on Mars, either. And, honestly, one groundbreaking discovery that neither the scientists nor the science-fiction writers of today have predicted will probably matter more than all of these.

8. Listening - 'the science-podcast bonus round'

1. *Brain implants that let a paralysed person type by thinking.*
2. *Three separate companies, in actual patients.*
3. *Uploading human consciousness to a computer ('brain-in-a-jar').*
4. *We still don't know what consciousness IS, let alone how to move it; neither the biology nor the physics is close.*
5. *Medical uses - paralysis, epilepsy, blindness.*
6. *A drug that safely slows human ageing, coming from many small breakthroughs rather than one big one.*

9. ■ Challenge - sentence transformation

1. *None of the ten trials was/were successful.*
2. *Both theories are equally interesting.*
3. *Each astronaut is an expert.*
4. *Most experts agree.*
5. *All (of) the data supports the theory.*
6. *Neither option is acceptable.*

10. ■ Challenge - where's the stress?

1. **(B)** *scienTific*
2. **(B)** *phoTOgrapher*
3. **(B)** *disCOvery*
4. **(B)** *aNALysis*
5. **(C)** *technoLOGical*
6. **(C)** *ecoNOMical*

11. Self-check

Self-assessment — no fixed answers.

Science fact, science fiction — Workbook — Answer Key

1. Vocabulary — science word families

1. **(B)** *discovery*
2. **(A)** *research*
3. **(B)** *scientist*
4. **(B)** *inconclusive*
5. **(C)** *inventors*
6. **(C)** *groundbreaking*

2. Vocabulary — gap-fill (science verbs & nouns)

1. **vett***ed*
2. **de***ploy*
3. **appr***aisal*
4. **rem***edy*
5. **con***jecture*
6. **engine***ered*

2b. Vocabulary — discursive writing

Sample answer

Every groundbreaking discovery carries with it a weight of responsibility that both the scientist and the inventor must acknowledge. When researchers deploy new technology, they must ensure it has been thoroughly vetted by independent experts. While some projects produce inconclusive results, others may lead to a permanent remedy for a previously incurable disease. However, the appraisal of such work often reveals deep ethical divides. Neither the pursuit of knowledge nor the desire for profit should outweigh the safety of the public. Every conjecture must be backed by rigorous analysis and proof before it is accepted as scientific fact. As we engineer new solutions to global challenges, we must remain aware that technological progress is a double-edged sword. All of us have a stake in how these discoveries are used. Ultimately, science is most effective when it is exploratory yet cautious, ensuring that every breakthrough serves the common good rather than just the interests of a few.

3. Grammar — pick the right quantifier

1. **(A)** *Every*
2. **(A)** *Neither*
3. **(B)** *neither*
4. **(C)** *All*
5. **(B)** *None*
6. **(A)** *no*
7. **(B)** *both*
8. **(A)** *Every*

4. Grammar — spot & fix the mistake

1. *Every scientist in the room agreed. (EVERY + singular)*
2. *All the information IS on the website. (information is uncountable)*
3. *Neither of the two theories IS correct. (formally singular)*
4. *I have NO funding / I don't have ANY funding. (no double negative)*
5. *Both (of the) experiments failed.*
6. *Most scientists agree... / Most OF THE scientists agree...*
7. *None of the results WERE a surprise. (plural is more natural)*
8. *Each of the astronauts HAS their own capsule. (EACH + singular verb)*

5. Word building — form the noun / adjective / verb

1. *scientific*
2. *technological*
3. *discoverer*
4. *inventive*
5. *analysis*
6. *proof*
7. *exploratory*
8. *communicative*

6. Reading — true / false / not given

1. **F**
2. **T**
3. **T**
4. **T**
5. **F**
6. **NG**

7. Writing — a prediction essay for 2050 (120–150 words)

Sample answer

By 2050, most common cancers will have a cure. Every child born in a rich country will be vaccinated at birth against a long list of diseases that killed millions in the twentieth century. Both AI and gene editing will have become normal medical tools, and no serious hospital will still be working without them. None of us will find that surprising by then — it will feel obvious. But some famous predictions will still not have come true. Flying cars will still not be everyday transport, because neither the batteries nor the physics really work. No large city will have been built on Mars, either. And, honestly, one groundbreaking discovery that neither the scientists nor the science-fiction writers of today have predicted will probably matter more than all of these.

8. Listening — 'the science-podcast bonus round'

1. *Brain implants that let a paralysed person type by thinking.*
2. *Three separate companies, in actual patients.*
3. *Uploading human consciousness to a computer ('brain-in-a-jar').*
4. *We still don't know what consciousness IS, let alone how to move it; neither the biology nor the physics is close.*
5. *Medical uses — paralysis, epilepsy, blindness.*
6. *A drug that safely slows human ageing, coming from many small breakthroughs rather than one big one.*

9. ■ Challenge — sentence transformation

1. *None of the ten trials was/were successful.*
2. *Both theories are equally interesting.*
3. *Each astronaut is an expert.*
4. *Most experts agree.*
5. *All (of) the data supports the theory.*
6. *Neither option is acceptable.*

10. ■ Challenge — where's the stress?

1. **(B)** *scienTific*
2. **(B)** *phoTOgrapher*
3. **(B)** *disCOvery*
4. **(B)** *aNALysis*
5. **(C)** *technoLOGical*
6. **(C)** *ecoNOMical*

11. Self-check

Self-assessment — no fixed answers.