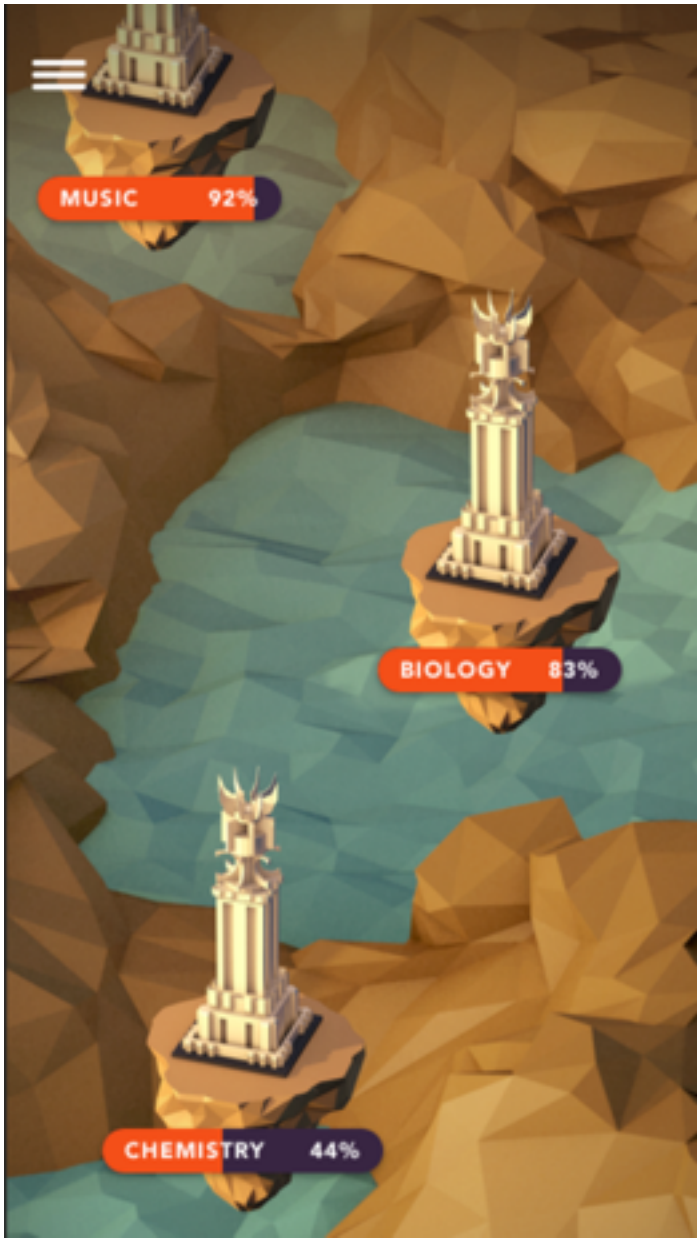
Temple

Question Guide



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Introduction and Aims

In order to prepare for their GCSE exams, students heavily rely on past notes and their textbooks. This revision is also often done with an exam looming in the coming days, and of course besides taking a decent level of discipline or motivation to begin, it can be incredibly boring. CGP test books for example have high quality questions, which are very accurate to real GCSE exams, however there is very little stimulation or fun in them.

There have also been various attempts to digitalise these practice questions, however these are few and far between. This is why Gojimo is thriving - it is a *very* simple testing app, in which students answer a series of multiple choice questions. However with these not only is it impossible to create a question which involves exam technique or anything above 1 mark, but the questions themselves are very poor. The only feedback students get is their percentage of correct answers - but ultimately there is nothing to really create sustained use of the app.

We wanted to combine the high quality questions, and create an incredibly unique perspective on learning.

Main aims:

- The base aim for this app is to create a fun, engaging and productive platform for students to learn their GCSEs.
- Have ultra-relevant, very high quality and varied questions, so that students have a clear understanding of what they need to know, and how this will translate onto the real test.
- Create a feedback platform for teachers to be able to see progress and various work the student has done within the app.

What we've created:

The idea is that the student will choose a sub-topic (for example 'Mitosis' within 'Inheritance' in Biology). They will then be tested on this in the form of a mini-test. If they pass (or get 75% or above), they will build their temple to the next stage.

After 3 weeks, their temple will 'degrade' and they will have to re-do the mini-test they did 3 weeks previously. This is in order to really integrate the knowledge into their long-term memory - which is extremely important for the GCSE exams.

- The issue that could come up with this is that they would have to constantly be re-doing past tests, however this won't happen as it takes roughly a week per sub-topic. Therefore it takes a week per test in each subject.

Each test consists of four questions; an a), b), c) and d). This is to make the tests structured and easy to comprehend, as well as mimicking genuine GCSE tests.

As there are multiple different types of questions that a student may encounter on the GCSE tests, we have designed various types of questions that will

Important notes for question creation:

We've designed multiple different types of questions to accommodate any type of answer that a student may encounter when taking the official GCSE exams. These are:

1. Multiple choice
2. Pairing
3. Sequence
4. Drop-list
5. Double drop-list
6. True / False
7. Fill in the gap
8. Labelling

I will go through these in the coming slides.

Besides being inclusive to all possible answers, it creates variation to each test, and therefore makes it much more interactive and engaging. Therefore, it is really important to have a strong variety of different types of questions.

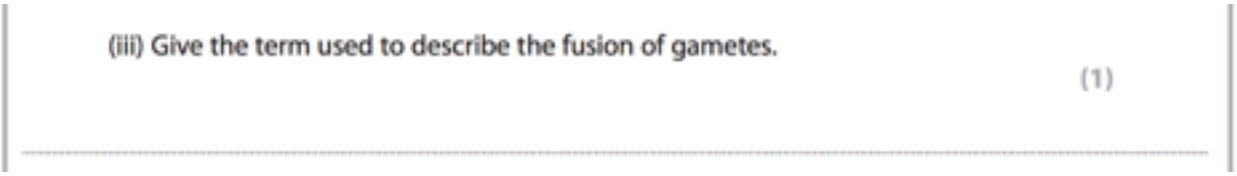
I'll attach a template for the question creation, but here is how each test will work:

- Students will select their topic and sub-topic (for example basic biological concepts -> cells, from the CGP textbook)
- Each test will have a bank of questions, and students will progress through an A question, a B question, a C question and finally a D question.
- Each part (a, b, c or d) should have at least 3 potential questions.
- The code will randomly pick one question from the A pool, one question from the B pool and so on.
- Upon finishing, the student will have 3 different options: Mark scheme, Ideal answers and Exit.

- The Mark scheme is just a run through their test with the correct answers highlighted
- The Ideal answers section consists of written answers - i.e. what you'd write on the real exam if the question came up. Of course, this doesn't go for 1 or 2 markers, as they are simply answered. However for sequence questions particularly this is essential - it helps to give the student an insight in how they should be answering the real questions to get the highest possible grade.
- The Exit button returns the user to the landscape page with their newly built temple.

Question A

Question A is a short, 1 or 2 marker question. Here is an example:


(iii) Give the term used to describe the fusion of gametes.

(1)

It can be multiple choice, a pairing question, fill in the gap, true or false.

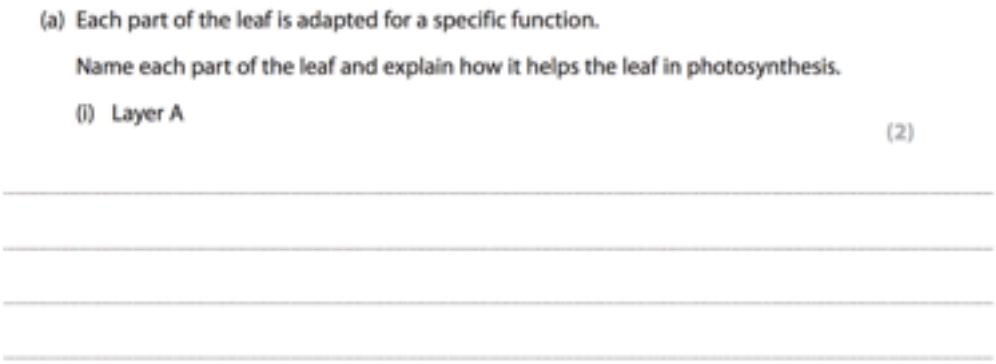
The main idea for the A question is that it's a starter that tests a very specific point of learning, which helps for a better understanding of the concept and of the key terms.

Within the mark schemes of the GCSEs, the marks are really given to the technical terms used - and despite having a deep understanding of the topic, a student may lose many marks simply for not using these so important terms.
This is why the A section of the test is so important.

Try to make the question types varied; although multiple choice will often be the preferred and easiest, is is incredibly important to keep a wide variety of true/false, labelling, pairing and other types of questions within the A sections.

Question B

Question B is a slightly longer question, between 2 / 3 marks. Here is an example:


(a) Each part of the leaf is adapted for a specific function.

Name each part of the leaf and explain how it helps the leaf in photosynthesis.

(i) Layer A

(2)

It could be a fill in the gap, pairing, label, drop-list, double drop-list.

The function of the question B is to lightly explore a topic more than just its surface. A perfect example as shown above is asking what is the purpose of the upper palisade layer. In a part A question it may ask just what this layer is.

This aims to prepare students for basic concepts simple ideas that may be tested. Again, key words are very important, as they are what get the marks.

As always, questions should be very varied, and for this section always worth a minimum of 2 marks.

Question C and D

Question C and D longer, and are designed for 3 / 4 / 5 / 6 mark questions. Here are two examples:

(d) The growth hormone used in this investigation was obtained from genetically modified bacteria.

Describe how bacteria can be genetically modified and used to produce growth hormone.

(4)

(ii) The number of fish in the lake decreases over the 25-year period.

Explain how the changes in phosphate levels might cause the decrease in the number of fish.

(5)

They could be a sequence, drop-list, double drop-list or label.

These two questions are vital, and will test more in-depth knowledge. This is often a function, or covers a complex idea.
Questions C and D are generally the difference between top grades and second best, and so they must really test the student's understanding of the key terms, and the function and idea behind what they are being tested on.

For each C and D question we need an ideal answer - a perfect written answer which should exhibit exactly what they should write on the test.
After each test they'll be able to look at these, and gain a better understanding of exam technique and what they should write on the test.

Really the aim of the C and D questions is to break down paragraph answers, and give students a step-by-step process on answering the question.

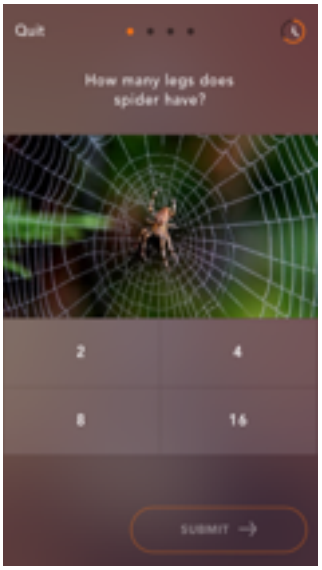
This part is the most important, particularly for subjects such as Geography and Biology, as processes are critical in understanding the topic.

QUESTION TYPES:

1. Multiple Choice

This is simply the classic multiple choice question.

Here's what it will look like when students take the test:



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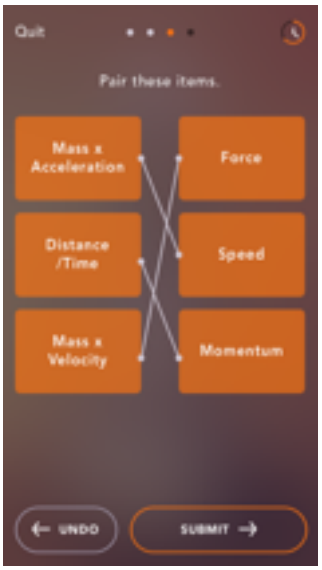
2. Pairing

Users will pair two boxes together.
This could be pairing words to their definitions, or pairing two answers that are wrong/right.
e.g.
"Pair the words to their definitions"
or
"Which two answers are not part of the following: _____"
or
"Which two answers are part of the following process"

There can be many pairs, just one pair or just two etc.



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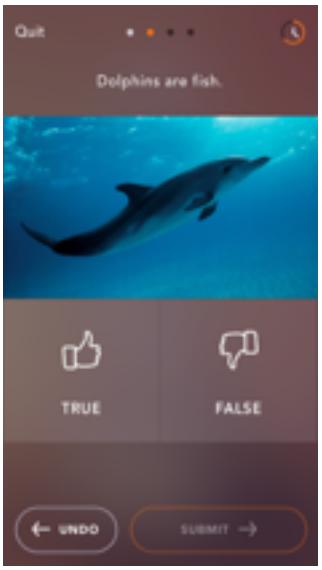
3. True / False

There is a statement, and users will decide whether it is true or not. e.g.

"A biological catalyst is something that speeds up the reaction without being used up"

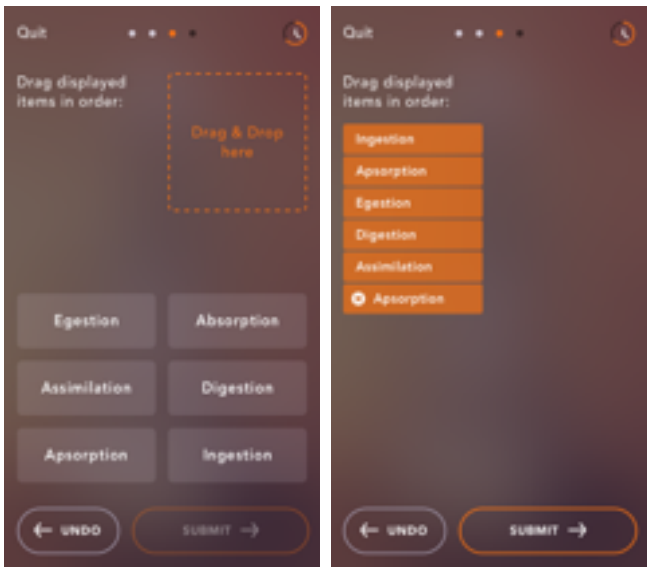
True / False ?



4. Drop-list

There will be a number of choices (usually at least 4) and students will drag and drop these into the drop-box IN ORDER.

They end up with a series of events in order.



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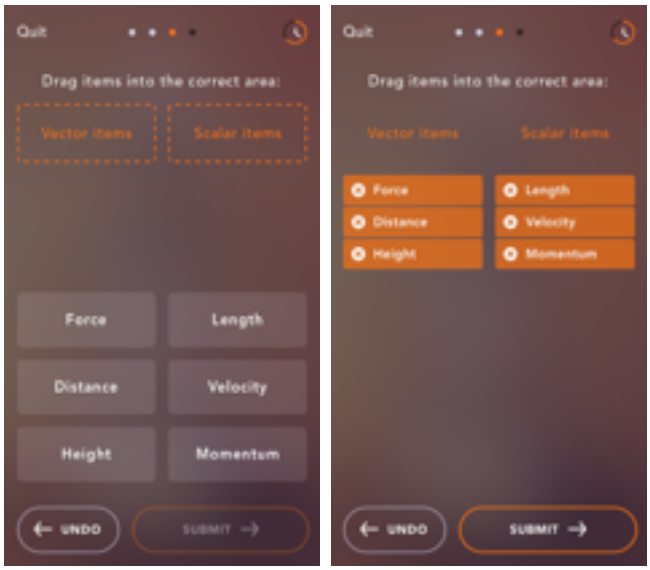
5. Double drop-list

There will again be a number of choices, and students will drag and drop each of these to create a table form.



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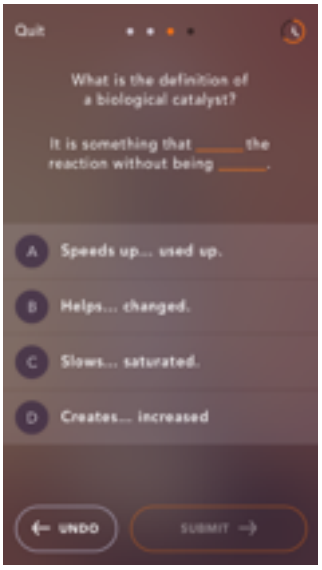
6. Fill in the gap

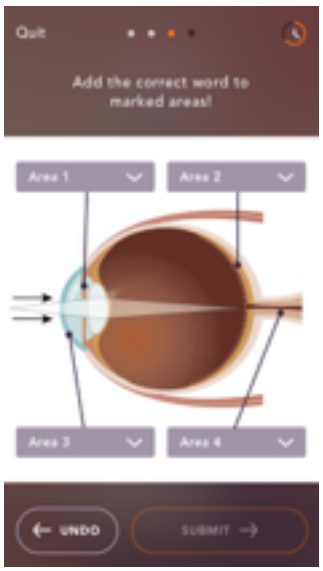
Students will be given a statement or short paragraph of text with spaces for missing words. They will have to select the correct option to fill up these spaces.



7. Label

There will be a diagram, and students would have to select labels, and decide which ones are correct.

Of course, there are copyright issues, and so creation of these images is for future discussion.



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8. Sequence

This is perhaps the most vital and important question type.

It is a sort of ‘block’ question which consists from a series of questions.

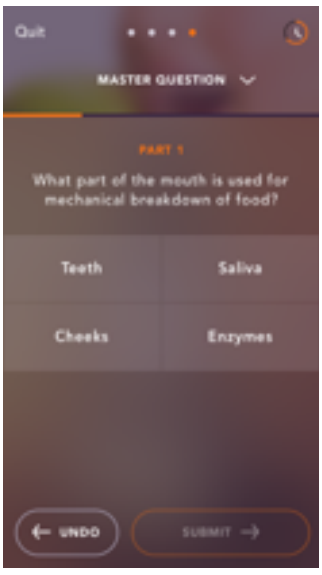
This series can be made up of any of the above question types.

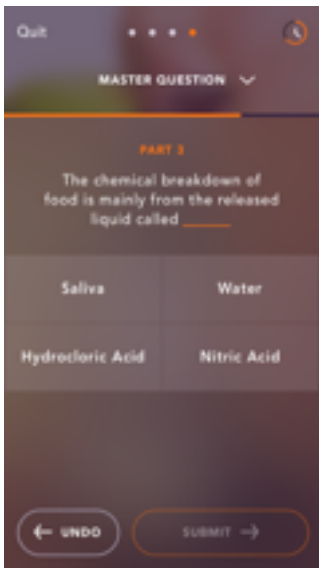
This should be used mainly for part C and D, as it is designed around longer questions, and paragraph answers.

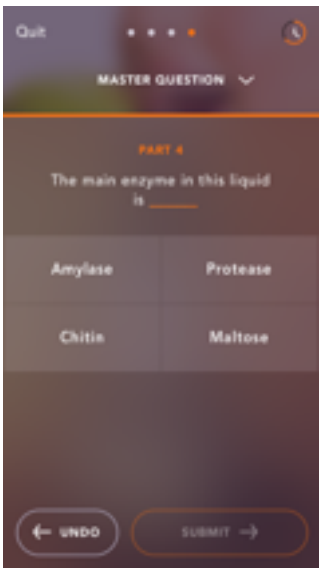
It is perhaps preferable if this is used largely, as despite it being one single question, it provides many different question types, and so the required variety should already be there.

These sequence questions aim to break down what would be a paragraph-long (4-6 marker) answer on a test.

For each sequence, there should be a concise ‘ideal answer’ which provides student with an understanding of exactly what they should write should the answer come up on the real exam.







	Question Level	Question Type	Question Content	Right Answer	Wrong Answers	Ideal answer (only sequence)
Cells	A	Multiple	All living things are made of ___	Cells	Single organelles…. Chlorophyll…… Ribosomes……	
	A	Multiple	The cytoplasm is where all ___ happen	Chemical reactions	Movements…….. Decisions……..… Phtosynthesis…	
	A	Fill in the gap	Generally, eukaryotes are ____ celled whereas prokaryotes are ___ celled	Both multi and single… Single	Single … multi……. Single … single…… Multi … Both multi and single……	
	B	Labelling	Label the animal cell	Correctly labelled diagram of an animal cell		
	B	Labelling	Label the plant cell	Correctly labelled diagram of a plant cell		
	B	Labelling	Label the bacterial cell	Correctly labelled diagram of a bacterial cell		
	C	Double drop-list	Organelles found in plant cells vs plant and animal cells	Plant: ……..….. Chloroplasts …… Cell Wall …….. Vacuole	Plant + animal: …… Cytoplasm ……. Membrane ……. Nucleus	
	C	Double drop-list	Bacterial cells uniquely contain vs found in plant and animal cells too	Ribosomes……..… Flagellum…… Chromosomal DNA. Plasmid DNA……	Cell Membrane…… Cell Wall..…….	
	C	Pairing	Definitions of:	Nucleus……. Cytoplasm…… Cell Membrane…… Mitochondria…… Ribosomes……..	Controls the cell…… Where chemical reactions happen…. Controls what enters and leaves the cell… Where respiration and energy production occur…… Consists of RNA and associated proteins	
	D	Sequence	How does the flagella function?… 1. It is a __ - like structure…….. 2. That __ to move __. …… 3. This is intended to move the __ cell away from __ substances…….. 4.towards beneficial substances such as __ or ___	1. hair…….. 2. rotates… forward 3. bacterial. harmful 4. nutrients. oxygen	1. rod, fork, paddle.. 2. whips, vibrates, compresses … side, backwards, vertically …….. 3. nucleus, animal, bacterial… large, small, unknown…… 4. CO2, enzymes, phagocytes	The flagellum is a long, hair-like structure which rotates to move the bacterial cell away from harmful substances such as toxins, and towards beneficial substances such as oxygen and nutrients
	D	Sequence	Name the three organelles that plant cells have but that animal cells don't	1. Cell wall: made of cellulose, provides support… 2. Vacuole: contains	1. Chitin, glycogen, protein… health, size, protection….. 2. Water, gases	Chloroplasts - plant cells have chloroplasts which contain chlorophyll. They are used for