



# Question Generating

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# What is question-generating?

..... because stars give out their own light

Why is the sun a star?

Why is the earth not a star?

Why do we get day and night?

How do we know how many stars there are?

What is a star made of?

# Why use this format?

1. It is creative and integrative for the learners.
2. It encourages responses at different cognitive levels
3. Occasionally, it can point to some learning problems (Why is the moon a star?)
4. In a collaborative group, it can yield valuable discussions, which may include peer-peer learning
5. With good partial answers provided, can produce many questions
6. With teachers, only a few responses are generated. With young learners, many responses are generated.



# Developing the idea

If the questions are collected, learners may be required to rank questions that require deeper and deeper learning, individually or in groups. This can be a metacognitive activity – thinking about their own thinking.

# Climate change answers

<b>1. ... because humans are burning fossil fuel.</b>	<b>Promotes the idea of human involvement in climate change.</b>	<b>Why does human activity increase carbon dioxide in the atmosphere? Why are fossil fuels running out?</b>
<b>1. ... because we make less carbon dioxide that way.</b>	<b>Promotes thinking about action</b>	<b>Why does using public transport reduce carbon dioxide emissions? Why does using nuclear reactors affect carbon dioxide content of the atmosphere?</b>
<b>1. ... because extreme weather events are dangerous.</b>	<b>Promotes thinking about impact of extreme weather events</b>	<b>Why does it matter that we have warmer and wetter summers?</b>

# Biology

<b>1. ... because a flower is not usually green</b>	<b>Explores the role of flowers in the attraction of pollinators. Also, points up the need for a plant to have some green parts to make and store energy via photosynthesis.</b>	<b>How does a plant attract insects? Why does a plant need some parts that are green?</b>
<b>1. ... because it is a plant</b>	<b>Explores the role of classification of part of living things. Also, could be used to look at plant features, and their roles in ecosystems.</b>	<b>Why is there more grass than cows? What advantage is there for some living things to be green?</b>
<b>1. ... because they are different species</b>	<b>Apart from mating and reproduction, this answer looks at issues of classification.</b>	<b>Why cannot cows successfully mate with sheep? Why must pollen for fertilising an apple come from a related apple tree flower?</b>

# Education for sustainability

<b>1. ... because humans are causing environmental change</b>	<b>The impact of humans on the environment is at the centre of this answer.</b>	<b>What makes a remote wilderness so different from a farm environment? Why are some fish becoming extinct or in short supply? Why is the earth warming?</b>
<b>1. ... because electricity is not readily available everywhere</b>	<b>As well as mechanical questions, this can also relate to accessibility to electrical supply and social justice.</b>	<b>Why are some human groups so reliant on hand machines and methods of agriculture?</b>

# Chemistry

1. ... because burning involves both a fuel and oxygen	This emphasises that both parts are essential for burning.	Why does the gas in a burner pipe not burn? Why does oxygen not burn?
1. ... because a solution is a homogenous mixture (the same all through)	This distinguishes between such things as solutions and suspensions.	Why are mixtures of gases also solutions? Why is salt solution not a suspension?
1. ... because both solute and solvent particles mingle (intermix) during dissolving	This makes the point that both the solute and the solvent are active in the solution process.	How do the particles interact in the dissolving process?
1. ... because some solutes are only partially soluble in the solvent	Few solutes dissolve in any proportions with a solvent.	Why is there a limit to solubility?
1. ... because reusing is better than recycling	It takes energy to recycle but not to reuse.	How does it cost energy to make a bag from old discarded pieces of plastic?



# Physics

<b>1. ... because sound can travel through solids, liquids and gases, but not a vacuum</b>	<b>This answer points to importance of a medium for sound.</b>	<b>Why could we not hear a spacecraft exploding in space?</b>
<b>1. ... because power = work/time</b>	At first sight, this could be a simple calculation issue. However, even more complex questions can be generated.	<b>Why is power an intrinsic rather than extrinsic property?</b>
<b>1. ... because light can travel through a vacuum but sound cannot</b>	This focuses on a distinction between sound and light.	<b>Why can we see a spaceship explode in space but not hear it?</b>
<b>1. ... because it can be reflected</b>	<b>Reflection is itself an interesting property of both light and sound.</b>	<b>Why can a person see themselves in a mirror? How do echoes form?</b>

# Earth science

<b>1. ... because a fossil is evidence of life from pre-human history</b>	<b>In this answer, we could dispel the myth that a fossil has be petrified.</b>	<b>Why is a mammoth footprint a fossil?</b>
<b>1. ... because rock can be deformed by an extreme pressure and heat</b>	<b>Is rock a perfect solid?</b>	<b>How are mountains pushed upwards?</b>
<b>1. ... because the earth's surface is continually being regenerated</b>	<b>The idea of the earth's surface being a dynamic system is at the heart of this answer.</b>	<b>Why are there fossils of sea creatures at the top of mountains?</b>

# Mathematics

<b>1. ... because it simplifies to <math>2a + b</math></b>	<b>This is a reverse form of the usual question that requires a learner to simplify.</b>	<b>What is the simplest form of <math>a + a + b</math>? What is the simplest for of <math>2(a+b) - b</math>?</b>
<b>1. ... because it is an integer</b>	<b>This explores the features of an integer?</b>	<b>Why can we count whole numbers?</b>

# Non-text part answer

## 1 Food Guide Pagoda

### Chinese Food Guide Pagoda(2016)



Salt	<6g
Cooking oil	25~30g

Milk and dairy products	300g
Soybeans and nuts	25~35g

Lean meats	40~75g
Fish	40~75g
Eggs	40~50g

Vegetables	300~500g
Fruits	200~350g

Cereals, tubers and legumes	250~400g
Whole grains and legumes	50~150g
Tubers	50~100g

Water	1500~1700ml
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Engage in physical activities  
equivalent to 6000 walking steps daily

# Conclusion

Question-generating is:

1. Versatile
2. Engaging
3. Creative
4. Metacognitive
5. Can adapt to different answer formats
6. Socially applicable