KS3 Science

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• https://youtu.be/AWtRadR4zYM
First Attempt In Learning

Oops! I will just undo that!
What we want from the students

• To enjoy being challenged and finding things difficult
• To make mistakes and learn from them
• Not be afraid to try and get things wrong - even if they don’t succeed the first time or the second....
• Act on the feedback given verbally and written in their books
• THINK!!
Focus on **learning goals** rather than **performance goals**

- A performance goal:
  - The end result i.e. their target grade

- A learning goal:
  - Focussing on the development of knowledge and understanding
How can you help?

1. Praise and reward
   • effort
   • resilience
   • determination
   • Overcoming obstacles that at first seem impossible
Encourage self-belief and resilience.

• I couldn’t do it either becomes I’m sure if we look at it together we can work out a solution
• It’s too hard becomes challenges are good because you’re brain’s having to work hard
• Mistakes becomes good mistakes
• I can’t becomes I can’t yet
How to get better in Science

• Focus on learning goals rather than performance goals
• Eg. Your daughter is disappointed after achieving a low percentage/grade in a topic test.
• How can you help?
  • Encourage your daughter to pick out three areas to focus on from the topic test and discuss what they could do to improve these areas.
• In the next topic test and/or end of year exam look back to the areas identified to focus on to see if there is an improvement.
I did not say that combustion of fossil fuel produces carbon dioxide. I instead discuss the global warming greenhouse effect which was related to the topic but not directly to the question.
I have learnt to make sure I am understanding what exactly the question is asking for.

I drew the arrow to show the activation in the wrong place. The arrow had to be more central and longer.
I have also learnt the arrow can only have one arrow head.
KS3 AQA

- Taught under 10 big idea topics
- Spiral design
  - Develop an understanding with multiple interactions
- Engaging lessons with a new theme every lesson
- Learn to see the world analytically
- Focus on skills
- Prepares students for study at GCSE
- Taught over 2 years

https://www.aqa.org.uk/subjects/science/ks3/ks3-science-syllabus
<table>
<thead>
<tr>
<th></th>
<th>Part 1 Taught in year 7</th>
<th>Part 2 Taught in year 8</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Forces</strong></td>
<td>Speed</td>
<td>Gravity</td>
</tr>
<tr>
<td><strong>Electromagnets</strong></td>
<td>Voltage and resistance</td>
<td>Contact forces</td>
</tr>
<tr>
<td></td>
<td>Current</td>
<td>Magnetism</td>
</tr>
<tr>
<td><strong>Energy</strong></td>
<td>Energy costs</td>
<td>Work</td>
</tr>
<tr>
<td></td>
<td>Energy transfer</td>
<td>Heating and cooling</td>
</tr>
<tr>
<td><strong>Waves</strong></td>
<td>Sound</td>
<td>Wave effects</td>
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<tr>
<td></td>
<td>Light</td>
<td>Wave properties</td>
</tr>
<tr>
<td><strong>Matter</strong></td>
<td>Particle model</td>
<td>Periodic table</td>
</tr>
<tr>
<td></td>
<td>Separating mixtures</td>
<td>Elements</td>
</tr>
<tr>
<td><strong>Reactions</strong></td>
<td>Metals and non-metals</td>
<td>Chemical energy</td>
</tr>
<tr>
<td></td>
<td>Acids and alkalis</td>
<td>Types of reaction</td>
</tr>
<tr>
<td><strong>Earth</strong></td>
<td>Earth structure</td>
<td>Universe</td>
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<tr>
<td></td>
<td>Universe</td>
<td>Climate</td>
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<tr>
<td></td>
<td>Climate</td>
<td>Earth resources</td>
</tr>
<tr>
<td><strong>Organisms</strong></td>
<td>Movement</td>
<td>Breathing</td>
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<tr>
<td></td>
<td>Cells</td>
<td>Digestion</td>
</tr>
<tr>
<td><strong>Ecosystem</strong></td>
<td>Interdependence</td>
<td>Respiration</td>
</tr>
<tr>
<td></td>
<td>Plant reproduction</td>
<td>Photosynthesis</td>
</tr>
<tr>
<td><strong>Genes</strong></td>
<td>Variation</td>
<td>Human reproduction</td>
</tr>
<tr>
<td></td>
<td>Human reproduction</td>
<td>Evolution</td>
</tr>
<tr>
<td></td>
<td>Evolution</td>
<td>Inheritance</td>
</tr>
</tbody>
</table>
Focus on working scientifically

**Analyse**
- Analyse patterns
- Discuss limitations
- Draw conclusions
- Present data

**Communicate**
- Communicate ideas
- Construct explanations
- Critique claims
- Justify opinions

**Enquire**
- Collect data
- Devise questions
- Plan variables
- Test hypotheses

**Solve**
- Estimate risks
- Examine consequences
- Review theories
- Interrogate sources
Science Classes

• There are 6 science classes – all mixed ability.
• Classes will either have 1 or 2 science teachers.
• 6 lessons per fortnight
• Homework set 3 times a fortnight – 20mins per piece
Assessments:

Baseline test – already completed in class
Regular mini topic assessments by teachers in class
Cumulative assessments each half term
  - Data reviewed by teacher and KS3 Science Coordinator
  - Interventions put in place if required
How can you check progress?

• Flight paths in the front of exercise books
• Learning journals
• Termly assessments sent home once per half term
# Exam analysis

## Forces and Electromagnets Examination Analysis

<table>
<thead>
<tr>
<th>Score</th>
<th>Mark</th>
<th>%</th>
<th>Assessment grade</th>
<th>Target grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

### Table

<table>
<thead>
<tr>
<th>Row</th>
<th>Topic</th>
<th>Subtopic</th>
<th>Score for use of mark</th>
<th>Visit</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10</td>
<td>Forces</td>
<td>Forces</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-15</td>
<td>Forces</td>
<td>Apply</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-18</td>
<td>Forces</td>
<td>Explain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-10</td>
<td>Electromagnets</td>
<td>Explain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-14</td>
<td>Electromagnets</td>
<td>Apply</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-16</td>
<td>Electromagnets</td>
<td>Explain</td>
<td></td>
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</tr>
</tbody>
</table>

### Reasons

1. Incomplete revision
2. Calculation error
3. I did not explain clearly
4. I missed the question
5. I did not understand the question
6. Ran out of time
7. Silly mistakes

Score without silly mistakes would have been: _____/80 ______%

### Specific Areas of weakness:

- 
- 
- 

### Specific Areas of strength:

- 
- 
- 

### Possible areas of improvement: (tick which apply to you)

<table>
<thead>
<tr>
<th>To read questions more carefully</th>
<th>Review a particular topic in more detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>To answer every single question even if you don’t know the answer</td>
<td>To use the correct scientific terms in your answers</td>
</tr>
<tr>
<td>To check through answers at the end of the test</td>
<td>Explain your answers in more detail</td>
</tr>
<tr>
<td>To improve drawing graphs correctly</td>
<td>Check you have included enough points for the marks available</td>
</tr>
</tbody>
</table>

### Smart target to improve:

I need to improve: _______________________________________

and I will make sure I meet this target by: _______________________

SPECIFIC MEASURABLE ACHIEVABLE REALISTIC TIMELY

Checked by teacher: _______________________

How can you help your daughter?

• Help with research homework – particularly finding suitable sources of information
• Encourage them to review new learning regularly
• Help plan revision for assessments
• Purchase a KS3 study guide/workbook (CGP are recommended)
• Visit science related museums or exhibitions
• Discuss science in the media
• Encourage use of the library
• Encourage them to respond to feedback from teachers
Revision Guide

- CGP
- KS3 Science
- Complete study & Practice
- (this one has the exam questions)
Computer Science

• The most important thing is that students get lots of chances to think through problem solving activities at home, e.g. finding the most efficient way to get through a set of shops on a shopping trip.

• They will be coding in Javascript and Python and learning some HTML this year.

• Websites that may help with this at home include:
  • [http://www.practicepython.org/](http://www.practicepython.org/)
  • [w3schools.com](http://w3schools.com)