

## Key Stage 3 Super-curricular Activities

### General ideas

- **Reading** of fact or fiction is always an invaluable activity as literacy underpins academic outcomes in all curriculum areas. This would be an ideal opportunity for some extended reading, for purpose or pleasure.
- <https://www.senecalearning.com/> Online learning across the curriculum and all key stages.
- <https://www.bbc.co.uk/bitesize> Online learning across the curriculum and all key stages.
- <https://www.ted.com/talks> 3300+ talks to stir curiosity
- **Anki**: a spaced-repetition flashcard app. You can download pre-made decks, but many people use it to create their own. Very powerful but not particularly shiny or gamified.  
<https://apps.ankiweb.net/>
- **Quizlet**: another spaced repetition flashcard app – more visually engaging – covers a range of curriculum areas. <https://quizlet.com/en-gb>
- **Develop your thinking skills**: use any of these resources as the starting point for your own reflection, structured as:
  - What point(s) are being made about this issue?
  - Do you agree or disagree? (bonus points for being able to see both sides!)
    - <https://www.youtube.com/watch?v=3QYOjTIOJQ4&feature=youtu.be> – think about ‘what is beauty?’
    - <https://www.youtube.com/watch?v=DLvIFRNbqOs&feature=youtu.be> – think about ‘what is authority?’
    - <https://www.youtube.com/watch?v=YOVS9yn2R7c&feature=youtu.be> – think about would you rather live for ever; turn metal into gold; always make the best decisions?
    - <https://www.youtube.com/watch?v=0fivQUIC7-8&feature=youtu.be> think about ‘is democracy a good form of government?’
- Reinvent the encyclopaedia game. Watch this video to see how it’s done, then let your curiosity lead you wherever it takes you!  
[https://www.ted.com/talks/rives\\_reinventing\\_the\\_encyclopedia\\_game](https://www.ted.com/talks/rives_reinventing_the_encyclopedia_game)

### Art

<https://www.educationquizzes.com/ks3/art-and-design/> Quizzes on a variety of art based topics.  
[https://www.bbc.co.uk/bitesize/subjects/z6f3cdm\\_KS3](https://www.bbc.co.uk/bitesize/subjects/z6f3cdm_KS3) Art & Design BBC Bitesize  
Explore a gallery online - <https://www.nationalgallery.org.uk/visiting/virtual-tours>  
<https://www.tate.org.uk/kids/make> Quizzes, projects and art adventures!

- Make a curiosity sketchbook or do a drawing a day sketchbook.

## Biology

- Watch this video <https://www.youtube.com/watch?v=JB7jSFeVz1U&feature=youtu.be> and make notes on:
  - 3 new facts I've learned
  - 2 questions about this that I now have
  - 1 thing I'm going to find out next about this
- You could also use your knowledge of what plants need to grow in order to try and grow the biggest plant possible. It could be a vegetable or a flower. Try to make it grow as big as possible by taking into account the optimum conditions needed for the growth of your chosen plant

Year 7 specific:

- Watch this video on digestion:  
<https://www.bing.com/videos/search?q=ks3+digestion+videos&&view=detail&mid=2FFD34FB586B7C19CD562FFD34FB586B7C19CD56&&FORM=VRDGAR&ru=%2Fvideos%2Fsearch%3Fq%3Dks%32Bdigestion%2Bvideos%26FORM%3DHDRSC3>  
Now you have watched the video write a story following the journey of a sandwich through the digestive system
- Watch this video and make notes on:
  - 3 new facts I've learned
  - 2 questions about this that I now have
  - 1 thing I'm going to find out next about this<https://www.youtube.com/watch?v=ISZLTJH5lYg> 'How do vitamins work?'

Year 8 specific:

- Aerobic respiration  
<https://www.bing.com/videos/search?q=aerobic+respiration+video+ks3&&view=detail&mid=68CC8F48C9CF34C9416668CC8F48C9CF34C94166&&FORM=VRDGAR&ru=%2Fvideos%2Fsearch%3Fq%3Daerobic%2Brespiration%2Bvideo%2Bks3%26FORM%3DHDRSC3>
  - Write down the equation for aerobic respiration
  - Write down three things you learnt from the video
  - What are you still curious about?
- Watch this video and make notes on:
  - 3 new facts I've learned
  - 2 questions about this that I now have
  - 1 thing I'm going to find out next about this[https://www.youtube.com/watch?v=8NUxvJS-\\_Ok&list=PLtx-qUNKJwDz2h9S5Yvil7NmwuofKC9C3&index=3](https://www.youtube.com/watch?v=8NUxvJS-_Ok&list=PLtx-qUNKJwDz2h9S5Yvil7NmwuofKC9C3&index=3) called 'What do the lungs do?'
- Bacteria and viruses  
The bacteria video  
<https://www.bing.com/videos/search?q=video+microbe+strutire+amoeba+sisters&view=detail&mid=AF3773A4DA516AB32F0FAF3773A4DA516AB32F0F&FORM=VIRE>

The virus video

[https://www.youtube.com/watch?v=8FqITslU22s&feature=emb\\_rel\\_pause](https://www.youtube.com/watch?v=8FqITslU22s&feature=emb_rel_pause)

Having watched the two videos can you make a poster, table or diagram comparing the structure of a virus and a bacteria.

Year 9 specific:

- Cell structure

<https://www.bing.com/videos/search?q=amoeba+sisters+cells&view=detail&mid=D25ED6DF745F030A75EFD25ED6DF745F030A75EF&FORM=VIRE>

- Draw a diagram of an animal and plant cell.
- What is the function of the cell organelles?
- What has the video made you curious about.

- Prokaryotes and eukaryotes

<https://www.bing.com/videos/search?q=prokaryotes+amoeba+sisters&&view=detail&mid=81365EF1EFE6C02C633881365EF1EFE6C02C6338&&FORM=VRDGAR&ru=%2Fvideos%2Fsearch%3Fq%3Dprokaryotes%2520amoeba%2520sisters%26qs%3Dn%26form%3DQBVR%26sp%3D-1%26pq%3Dprokaryotes%2520amoeba%2520sisters%26sc%3D4-26%26sk%3D%26cvid%3D96E5FOCA406C4409BBA4B3A06A599FD2>

Write down

- 3 new facts I've learned
- 2 questions about this that I now have
- 1 thing I'm going to find out next about this

- [https://www.youtube.com/watch?v=GK\\_vRtHJZu4](https://www.youtube.com/watch?v=GK_vRtHJZu4) 'Why is biodiversity important?'

Write down

- 3 new facts I've learned
- 2 questions about this that I now have
- 1 thing I'm going to find out next about this

## Chemistry

- <http://www.docbrown.info/ks3science.htm> quizzes and notes on all topic areas
- <https://www.rsc.org/periodic-table> Discover the elements through videos, podcasts, data trends and uses

## Computer Science

- Watch <https://www.youtube.com/watch?v=dE1DuBesGYM>. This is a TED talking arguing that gaming can make the world a better place. Do a little research and try to find a video which suggests the opposite is true. After you have formed your own opinion, write a short essay discussing the key points, giving evidence to support your view.

- Using software of your choice, create a one-minute animation about cybersecurity threats and staying safe online.
- Visit <https://brilliant.org/> and take a course (there is a fee for this)
- Write a short essay debating the following question – When will computers be more intelligent than the people who design them?

### Design Technology

- <https://tv.data.org.uk/> -
- Design a series of greetings cards using animals as your inspiration.
- Create a model of a household object using paper or card, tape and glue.
- Design your dream bedroom. Draw the layout of the room and furniture. Include examples of furniture, lighting, wall colours, wall paper and bedding that you would like. Explain how/ why you have chosen them. Present it as a booklet or use a free online mood board app.

### Drama

- <https://www.dialectsarchive.com/> visit this website and practice an accent
- Write a short script for a play, choosing one element from each column below:

Number of characters	Theme	Style
3	One Day in Derby	Comedy
4	The Lost Thing	Historical
5	Secrets and Lies	Magical realism
6	The Box of Delights	Western
7	Sugar and Spice	Court room
8	After the rain	Science fiction

### English

- Learn a poem by heart - <https://www.poetryfoundation.org/>
- Read – anything!
- Write a story – or a book! Set yourself the challenge of writing 200 words every day until the end of the summer holidays.
- Add to your bullet journal
- Explore some poetry: [Poetry | Genius](#)

### Food and Nutrition

- Visit [www.bbc.co.uk/goodfood](http://www.bbc.co.uk/goodfood) and make a recipe
- Try an ingredient you've never tried before.
- Consider what it is like to have shortages of particular products in the supermarkets... What foods could you manage without and what do you really need?
- Watch a 'How it's made' video on YouTube
- Try the nutrition quizzes here: <https://www.foodafactoflife.org.uk/11-14-years/quizzes/multiple-choice-individual-quizzes/>

- Using your recipe book, make something you haven't tried yet, or have a go at something you have already made in school but modify it. Please take a photo of it and email it to me!

## Geography

- Have a look at the 'Horrible Geography' series of books that is available in the library.
- Use Sporcle or Lizard Point to boost your place knowledge.
- Have a go playing Geoguessr online.
- Enter the RGS 'Young Geographer of the Year' competition
- Enter the GA 'Physical Geography' photo competition
- Watch any of these videos and make notes on:
  - 3 new facts I've learned
  - 2 questions about this that I now have
  - 1 thing I'm going to find out next about this
    - [https://www.ted.com/talks/edward\\_burtynsky\\_photographing\\_the\\_landscape\\_of\\_oil](https://www.ted.com/talks/edward_burtynsky_photographing_the_landscape_of_oil)
    - [https://www.ted.com/talks/edward\\_burtynsky\\_my\\_wish\\_manufactured\\_landscapes\\_and\\_green\\_education](https://www.ted.com/talks/edward_burtynsky_my_wish_manufactured_landscapes_and_green_education)
    - <https://www.youtube.com/watch?v=sT6jtTsGM&feature=youtu.be>

## History

- L4 have their Curious George project to continue.
- U4 have Pecha Kucha research. Both of these are perfect supercurricular activities already.
- All (but U3 might find it especially interesting, as it links to the U3 scheme of work): deepen your understanding of African-American music:
  - Use the resources on the Smithsonian Website <https://www.si.edu/spotlight/african-american-music/roots-of-african-american-music>
  - Watch the BBC series Soul Deep on YouTube: <https://www.youtube.com/playlist?list=PLUelSsn7oIU5FWcx1pQV1JZfKottClgdM>
- <https://www.bbc.co.uk/teach/ks3-history/zhbdp8> - watch any video that interests you on this link, or any video that interests you here <https://www.bbc.co.uk/programmes/genres/factual/history> (but check with parents first for this second link). Make notes on:
  - 3 new facts I've learned
  - 2 questions about this that I now have
  - 1 thing I'm going to find out next about this

The following websites can help with what you have been studying OR just what you are interested in knowing more about from the past for all years.

<https://www.historylearningsite.co.uk/>

<https://spartacus-educational.com/>

### L4 specific:

Specifically on **the gunpowder plot** with clickable links:

<https://spartacus-educational.com/STUGunpowderP.htm>

<https://spartacus-educational.com/STUcatesby.htm>

<https://www.bbc.co.uk/bitesize/topics/z9crd2p>

For those of you who became **curious** about the **Reformation**

<https://www.historylearningsite.co.uk/the-reformation/> again, with lots of clickable links. Is a site for older students but enjoy anyway!

#### U4 specific

<https://spartacus-educational.com/FWW.htm> lots of stuff on **WW1** with clickable links

<https://www.historylearningsite.co.uk/world-war-one/>

<https://www.bbc.co.uk/bitesize/topics/z4crd2p>

#### **Languages:**

- **Youtube** has videos to help you learn a range of languages using the Michel Thomas method, including Mandarin, Russian and Arabic, as well as French, Spanish and German. The Michel Thomas is a well-established method for learning language by speaking. A link to the French videos is here:

[https://www.youtube.com/watch?v=UaXeEXfKzoc&list=PLpfbVDwn1uehz28FAp5mGZcrrgGu\\_r04sl](https://www.youtube.com/watch?v=UaXeEXfKzoc&list=PLpfbVDwn1uehz28FAp5mGZcrrgGu_r04sl)

- **Duolingo**: probably the most famous language learning app. <https://www.duolingo.com/>
- **Memrise**: Another language learning app – they have lots of videos of real humans speaking the language, so you can hear the different ways words actually get pronounced.

<https://www.memrise.com/>

- The British Council have created a range of challenges for several languages. An example is shown below, and you can see larger versions online at:

[https://www.britishcouncil.org/sites/default/files/the\\_great\\_french\\_language\\_challenge.pdf](https://www.britishcouncil.org/sites/default/files/the_great_french_language_challenge.pdf)

[https://www.britishcouncil.org/sites/default/files/the\\_great\\_german\\_language\\_challenge.pdf](https://www.britishcouncil.org/sites/default/files/the_great_german_language_challenge.pdf)

[https://www.britishcouncil.org/sites/default/files/the\\_great\\_spanish\\_language\\_challenge.pdf](https://www.britishcouncil.org/sites/default/files/the_great_spanish_language_challenge.pdf)



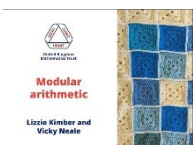
## Maths:

These websites are great for consolidating your regular studies, you have login details for MyMaths and Dr Frost Maths, email [maths@derbyhigh.derby.sch.uk](mailto:maths@derbyhigh.derby.sch.uk) if you need these!

- <https://www.mymaths.co.uk/>
- <https://www.dr frostmaths.com/>
- <https://www.bbc.co.uk/bitesize>
- <https://corbettmaths.com/> (more advanced)

Going a bit further you may like these YouTube channels, including UK Maths Trust where you can watch the recording of the recent webinar we showed in school!

- 3Blue1Brown: [https://www.youtube.com/channel/UCYO\\_jab\\_esuFRV4b17AJtAw](https://www.youtube.com/channel/UCYO_jab_esuFRV4b17AJtAw) - start by checking out the video about how prime numbers can make unexpected patterns (<https://www.youtube.com/watch?v=EK32jo7i5LQ>)
- Numberphile: <https://www.youtube.com/user/numberphile> - how about a video about the Enigma machine by the brilliant Dr James Grime ([https://www.youtube.com/watch?v=G2\\_Q9FoD-oQ](https://www.youtube.com/watch?v=G2_Q9FoD-oQ))
- The Royal Institution: <https://www.youtube.com/user/TheRoyalInstitution> - they are famous for the Christmas lectures, which were on Maths last year (<https://www.youtube.com/watch?v=q4DrUHKCOQ>)
- UK Maths Trust: [https://www.youtube.com/channel/UCz\\_D5xFMIpO5G7qTXImNCLQ](https://www.youtube.com/channel/UCz_D5xFMIpO5G7qTXImNCLQ) - the webinar is here (<https://www.youtube.com/watch?v=ZnAW3IQNhTw>)

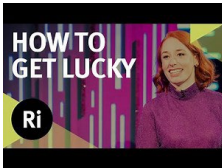


### [UKMT webinar: Modular arithmetic](#)

Facilitated by Lizzie Kimber and Vicky Neale. This webinar will introduce modular arithmetic, a beautiful and powerful way of thinking that is important in number theory, and more broadly in mathematics, computer science and

cryptography. We'll explore multiplication tables, looking for patterns and structure, and will think about how modular ...

[www.youtube.com](http://www.youtube.com)



### [Christmas Lectures 2019: How to Get Lucky - Hannah Fry](#)

In the first lecture of the 2019 Christmas Lectures, Hannah Fry explores how mathematical thinking and probability can allow us to understand and predict complex systems - even helping us to make our own luck. Watch more Christmas Lectures: <http://www.rigb.org/christmas-lecture...> Hannah Fry is the 2019 Christmas Lecturer. She is an Associate ...

[www.youtube.com](http://www.youtube.com)



### [The Royal Institution - YouTube](#)

Videos to make you think more deeply about science. Explosive short films, full length talks from the world's leading scientists and writers, and videos to c...

[www.youtube.com](http://www.youtube.com)



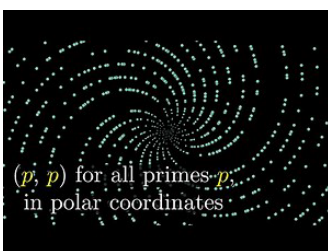
### [158,962,555,217,826,360,000 \(Enigma Machine\) - Numberphile](#)

The Nazi's Enigma Machine - and the mathematics behind it - was a crucial part of World War II. Flaw video at:

<http://www.youtube.com/watch?v=V4V2bpZlqx8> More

links & stuff in full description below ↓↓↓ Brown papers on ebay: [bit.ly/brownpapers](http://bit.ly/brownpapers) Dr James Grime demonstrates the machine and discusses its many configurations. James' "day job ...

[www.youtube.com](http://www.youtube.com)



### [Why do prime numbers make these spirals?](#)

A story of mathematical play. Home page:

<https://www.3blue1brown.com> Brought to you by you:

<http://3b1b.co/spiral-thanks> Based on this Math Stack

Exchange post:

<https://math.stackexchange.com/questions/885879/meaning-of-rays-in-polar-plot-of-prime-numbers/885894> Want to

learn more about rational approximations? See this Mathologer video. [https ...](https://www.youtube.com)

[www.youtube.com](http://www.youtube.com)



## Listening:

- Select a piece of music or song (new or one you already know).
- Listen to the music critically – try not to let it wash over you. Ask yourself:
  - Why do you like / dislike this piece of music?
  - What instruments can you hear?
  - Does the piece have different sections? How are they different?
  - Can you describe the tempo, dynamics, texture, rhythm, melody or harmony of the piece you are listening to?
  - Can you guess who wrote it? Why do you think that?
- Try turning your thoughts into a written paragraph.

## Online learning:

- Go to - [Derbyhigh.musicfirst.co.uk](http://Derbyhigh.musicfirst.co.uk)
  - Your username for this site is: The first letter of your first name, followed by your surname (without spaces). For example: Thomas Dobney is TDoBney. Your password is ChangeMe1 and you will need to change that once you login for the first time.
  - You can work your way through the various tabs, learning about instruments, theory and music history. When you complete tests, your music teachers can monitor your results.

## Investigation:

- Investigate styles and genres of music that are unfamiliar to you.
  - What do you know about Indonesian Gamelan, African Drumming, Minimalism, Renaissance Music, Indian Classical Music? Perhaps a lot, perhaps not much. Spotify, Soundcloud and Youtube have infinite recordings of all of these styles. Listen and analyse then look up the development of genres that are new to you. Create a presentation outlining the key features of these styles and the best known composers / artists – link it to a particular piece if you can.

## Creation:

- Using the instrument you play, your voice, Sibelius or for those of you who own an AppleMac using garageband, compose an original piece of music.
  - You may choose to do this in any style. If it is a song, remember to try and convey something to the listener through the lyrics; tell them something about you or what you think. If it is an instrumental piece, remember to write well for that instrument, for example wind players need to breathe and trumpets can only play one note at a time. When you are first composing, it is good to try and make your piece sound a bit like something that already exists.

## Physics

## U3

## Review

<https://www.bbc.co.uk/bitesize/subjects/zh2xsbk>

- Look through the review on the topics we have covered this year in U3: space, forces and energy.
- Work through the films clips and quizzes to gain a deeper understanding of both topics.

<https://www.youtube.com/watch?v=l2BwzZlgqj8>

- This Youtube clip revises graph drawing. Watch it all the way through. You do not need graph paper for this activity.
- Try to summarise how to draw a perfect graph in 5 easy steps or in poster form.

### Creative

<https://www.bbc.co.uk/bitesize/topics/zfmk8mn/articles/zn3t382>

- Look through this interesting activity on who was the best scientist: Faraday or Dalton. This exercise gives you an insight into how a scientist thinks when doing work, and reinforces the work done in the “Measurement and Density” topic about developing scientific practical skills.
- You could write a short article of no more than a page in your bullet journal explaining which was the best scientist, Faraday or Dalton, and why.
- You could also research other great scientists to see if there is a better candidate for the best scientist.

### Extension

Fermi questions are questions in physics that seek a fast, rough estimate of a quantity which is otherwise difficult or impossible to measure directly. Try these Fermi questions related to topics studied in U3. Give them a go, try to estimate an answer by using your scientific knowledge and common sense and don't worry about getting close to a “correct” answer. You can use the internet for help. A suggested unit for your answer is given.

1. How much has the mass of the human population on the earth increased in the last year? (kilograms)
2. How many metres of spaghetti would be needed if all of the children in a school had spaghetti bolognese for lunch? (metres)
3. What distance will a ball point pen write? (metres)
4. How many hours will you sleep in a lifetime? (hours)
5. How many litres of water does the school use each week? (litres)

### L4

#### Review

<https://www.bbc.co.uk/bitesize/subjects/zh2xsbk>

- Look through the review on the topics we have covered this year in L4: Light, Sound and Electricity.
- Work through the films clips and quizzes to gain a deeper understanding of both topics.

<https://www.youtube.com/watch?v=l2BwzZlgqj8>

- This Youtube clip revises graph drawing. Watch it all the way through. You do not need graph paper for this activity.
- Try to summarise how to draw a perfect graph in 5 easy steps or in poster form.

### Creative

<https://www.bbc.co.uk/bitesize/topics/zfmk8mn/articles/zn3t382>

- Look through this interesting activity on who was the best scientist: Faraday or Dalton. This exercise gives you an insight into how a scientist thinks when doing work, and reinforces the work done in the “Measurement and Density” topic about developing scientific practical skills.
- You could write a short article of no more than a page in your bullet journal explaining which was the best scientist, Faraday or Dalton, and why.
- You could also research other great scientists to see if there is a better candidate for the best scientist.

### Extension

Fermi questions are questions in physics that seek a fast, rough estimate of a quantity which is otherwise difficult or impossible to measure directly. Try these Fermi questions. Give them a go, try to estimate an answer by using your scientific knowledge and common sense and don't worry about getting close to a “correct” answer. You can use the internet for help. A suggested unit for your answer is given.

1. How long does it take for light to travel from the Sun to the Earth (minutes or days or years)?
2. How long would it take for you to walk from the Sun to the Earth (minutes or days or years)?
3. Why could you not do this?
4. How long does it take for sound to travel from the Sun to the Earth (minutes or days or years)?
5. Why could it not do this?
6. How many hours will you sleep in a lifetime? (hours)
7. How many litres of water does the school use each week? (litres)

### U4

- <http://www.furryelephant.com/>
- Login to physics
- Username dhs password electron
- Go to the section on Radioactivity – there are lots of revision lessons and quizzes so you can revise radioactivity or learn more

- <https://www.youtube.com/watch?v=FNNKhE1FNNM>

- Watch the video and answer the following

❖ State the advantages of nuclear power

- ❖ Describe how the energy is released
  - ❖ Explain the 4 stages of energy production
  - ❖ What do you think might be some of the disadvantages of making electricity from nuclear power rather than from burning coal?
- <https://isaacphysics.org/>
    - Login in top right hand corner
    - Sign up with school email address and a password
    - Enter details
    - Get started You can then access loads of different questions on all the physics topics you have studied or you can stretch yourself by looking at topics in the future and by learning about skills needed in physics such as significant figures or standard form

## **PE**

### Practical Activities

- Try a new workout:
  - <https://www.youtube.com/user/yogawithadriene>
  - HIIT- <https://www.youtube.com/user/thebodycoach1>
  - General workouts <https://www.popsugar.co.uk/Workouts>
  - 5k training <https://www.nhs.uk/live-well/exercise/couch-to-5k-week-by-week/>
  - Sweat with Kayla – Free app on iPhone and Android
  - Pinterest have lots of body weight circuit ideas that can be done in your bedroom

### Theoretical Activities

- If you want to learn more about how the body works during exercise then visit the following sites and research the following topic areas.
  - Cardiovascular system
  - Respiratory system
  - Training Principles
  - Sports Psychology

<https://www.bbc.co.uk/bitesize>

<https://www.brianmac.co.uk/>

[BBC Sounds - Sport Podcasts](#)

## **RS**

- Find out how Easter is celebrated in different countries in the world
- Research a famous place of worship in Christianity, Judaism, Islam, Sikhism, Hinduism, Buddhism and produce a tour guide
- Find out about a less well known religion, eg. Jainism, Baha'i
- Write an article about a famous religious person who has done much for others
- Find out about a religious charity or organisation which helps those in need (local and/or global)

- The library has a wealth of fiction and non-fiction suggestions such as Harry Potter, I Am Malala, Life of Pi, Sophie's World and The Hunger Games. Use the Accessit tool to find others.

### Experiences:

- Carry out a nature trail with a particular focus: insects, leaves, etc.