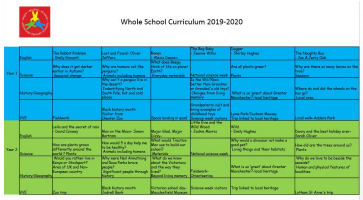
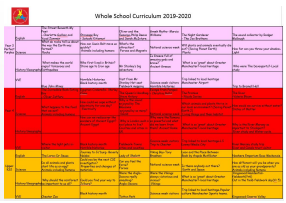
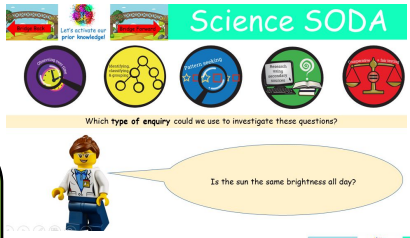
What does 'Science' look like at Adswood Primary?

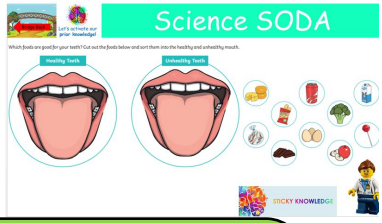
1. Curriculum mapping


Whole School Curriculum 2019-2020


Whole School Curriculum 2019-2020

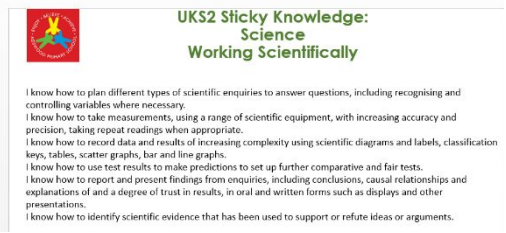
We have weekly SODA activities, using pictures as the stimulus with key questions based around the five types of enquiry. These stimulate discussions and extend and reinforce **scientific vocabulary. They also give the opportunity to bridge back to previous learning and bridge forward to topics they may be taught in later years.**



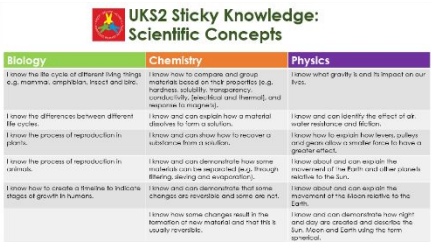


We have developed **sticky knowledge** checklists which cover conceptual knowledge and working scientifically skills for their relevant age group or Key stage.

Our curriculum has been created for **our learners**. We utilise resources and **high quality, age appropriate texts** recommended by Focus Education whenever possible that **directly link to LCC Science drivers** for each year group.


UKS2 Sticky Knowledge:
Science
Working Scientifically

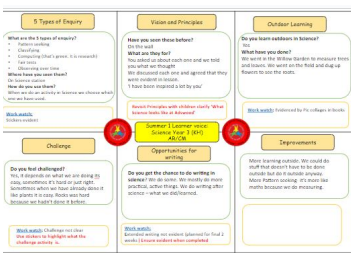
I know how to plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
I know how to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
I know how to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
I know how to use test results to make predictions to set up further comparative and fair tests.
I know how to report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.
I know how to identify scientific evidence that has been used to support or refute ideas or arguments.


UKS2 Sticky Knowledge:
Scientific Concepts

Biology	Chemistry	Physics
I know the life cycle of different living things e.g. mammal, amphibian, insect and bird.	I know how to compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity, [electrical and thermal], and response to magnets).	I know what gravity is and its impact on our lives.
I know the differences between different life cycles.	I know and can explain how a material dissolves to form a solution.	I know and can identify the effect of air, water resistance and friction.
I know the process of reproduction in plants.	I know and can show how to recover a substance from a solution.	I know how to explain how levers, pulleys and gears allow a smaller force to have a greater effect.
I know the process of reproduction in animals.	I know and can demonstrate how some materials can be separated (e.g. through filtering, sieving and evaporation).	I know about and can explain the movement of the Earth and other planets relative to the Sun.
I know how to create a timeline to indicate stages of growth in humans.	I know and can demonstrate that some changes are reversible and some are not.	I know about and can explain the movement of the Moon relative to the Earth.
	I know how some changes result in the formation of new material and that this is usually reversible.	I know and can demonstrate how night and day are created and describe the Sun, Moon and Earth using the term spherical.

2. Learner voice

We want all our learners to have a voice and to be heard. We use learner voice to impact on the way we teach Science in our school. For those learners who find Science more challenging, we want to find out how they would like us to help them to make progress and enjoy their learning. Learners have a very positive attitude towards Science across the school.

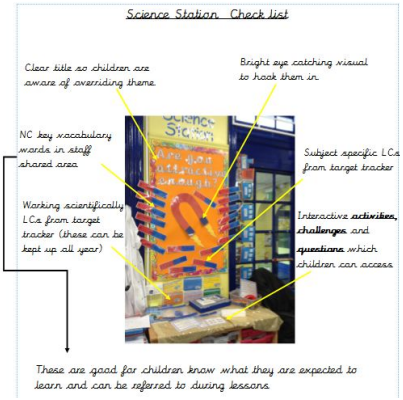


3. Adaptive teaching

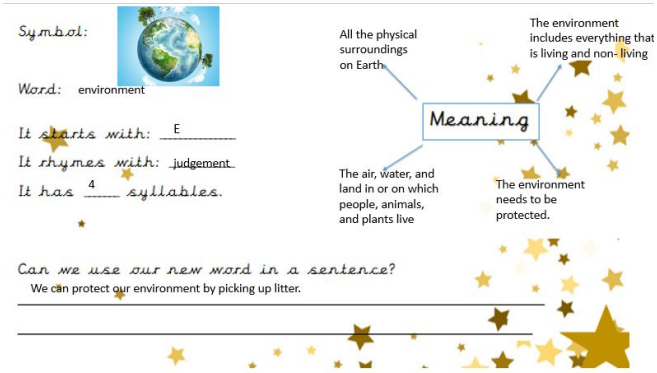
At Adswood, the teaching of **Science is inclusive** through **quality first teaching**. (as a school we use the NASENCO handbook) Provision for learners is **age appropriate** but adapted **to meet the needs of our learners.** SEN Support plans outline specific targets for our learners with additional needs.
All learners at Adswood Primary complete a '**One Page Profile**' to inform staff teams so about how they learn best and what support they might need.
As our Science tends to be practical/enquiry based, learners with SEN often shine in Science activities and with structured support can access the full curriculum.

4. Learning environment

There is a designated area for Science in each classroom, the **Science Station**. This is where learners can explore , extend and revisit current learning in Science. Each area contains key vocabulary, relevant conceptual and working scientifically learning challenges that inform the learner of their current learning targets. Science at Adswood pupil voice is displayed alongside the five types of enquiry display.



The Science Station is an interactive space where learners might have the opportunity to observe ongoing Science experiments, carry out activities, access challenges and explore aspects of their current learning independently. While carrying out these activities learners can work collaboratively. In their discussions with one another, they have the opportunity to use key vocabulary, explain their thinking, share their ideas, predictions, knowledge and consolidate their learning.

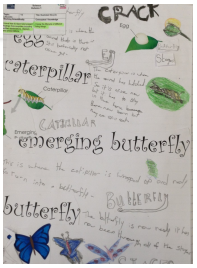


Word aware strategies are used to enhance the learners' understanding of key vocabulary in LCC drivers. Each class has a **word pot** where vocabulary is displayed and where learners can revisit or bridge back to word aware techniques to reinforce key vocabulary.

5. Opportunities for Working Scientifically.

Working Scientifically targets are on display in each classroom. These cover the five strands of; observation over time, pattern seeking. identifying, classifying and grouping, comparative and fair testing and research using secondary sources. Each class completes a TAPS assessment every half term which targets one of these strands.

We have had exciting **VVE opportunities in Science**. Classes go on trips linked to their Science themes, Visitors include, Chester Zoo (Sing for Songbirds and Palm Oil Projects), Zoo lab and silly Science workshops during BSW.



BRITISH SCIENCE WEEK

Each year we celebrate British Science week. This is extended across the term to become British Science term. This follows the Theme of that years Science week where the school follows an environmental theme where possible. During BSW school is immersed in Science throughout the whole week.

6. Cross curricular links

CHESTER ZOO

Primary Engineer® Programmes
...the first step

THALES

IN LOCO PARENTIS

We try to engage our learners in practical, fun and stimulating experiences, which feed in to other areas of the Curriculum. Through our involvement with the SSISSP Primary Partnership programme Year 5 children attend termly workshops in Science to enhance their Science curriculum. During BSW we engage learners through a variety of national competitions such as Primary Engineers, Bay lab competition and Thales glider competition.

Through our Life skills curriculum/EBA awards children in EYFS, KS1 and KS2 have the opportunity to receive awards which extend their curriculum through home learning and extra curricular activities.

7. Learning beyond the classroom

Science lends itself to outdoor learning and whenever possible we use our local environment to enhance and enrich our learners' experiences in accessing the Science curriculum. This may involve bird watching and making bird feeders to encourage native birds to our environment or a walk to the park to observe local flora and fauna in EYFS.
We have also developed links with local high schools. Our UKS2 learners regularly attend practical/ hands on Science lessons in 'real' Science labs at Cheadle Hulme School. This not only gives them an enriching Science experience but also gives them a flavour of what Science will look like in high school.

Cheadle Hulme School

Through the visits we arrange, learners have the opportunity to extend their knowledge and experience first hand activities linked to their LCC key questions. Through our links with Chester Zoo. learners have had the opportunity to look into the effects of the damage being caused by deforestation for palm oil plantations, broadening their outlook to take on global issues.

CHESTER ZOO

SUSTAINABLE PALM OIL CHALLENGE

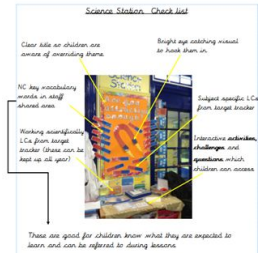
8. Challenges to deepen learning

Our school vision, 'Enjoy. Believe. Achieve' is evident through our additional challenges for learners. Some set verbally as a result of daily formative assessment, others available through 'Challenge' areas within the classroom, we enjoy seeing our pupils challenge themselves to achieve more.

Each half term, learners are set 'Home Learning Challenges' aimed to deepen learning. These challenges may be completed independently or with support from someone outside of school.

9. Self- Assessment

Current learning challenges are displayed on the class Science Station, where children can access their current subject specific targets as well as the 5 types of enquiry.



10. Staff CPD

As subject lead, I have attended Local Authority Science subject lead courses. and SEERIH conferences (Science and Engineering Education Research and innovation Hub). In addition to this I have led staff meetings, completed work watches, co coached my colleagues both formally and informally, I am a source of advice and support to other staff members and I have acted as an exemplar of Quality First Teaching in Science. As part of the PQSM award I introduced 'Reach Out CPD' which enables staff to have to quality online CPD.

ReachOut CPD

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