



Subject Leadership - A
Clear vision for science, created and implemented by teachers and children, through principles for teaching and learning.

Key need: a clear vision for science.

Reference date on **development log:**

- 07.10.21
- 10/11.11.21
- 16/17.11.21
- 14.12.21
- 15.12.21

At Riverside we use songs, raps and rhyme to embed learning. Using a memorable tune (If you're happy and you know it) even the youngest members of the school can now remember what is science.



Riverside Primary @Riverside_Pri · 5d ...
Meet our new **#RiversideScienceSquad** We learn about the world around us that's for sure. Describing, looking at experiments and more. Knowing facts and then researching, questioning and then exploring. We are scientists at Riverside for sure.



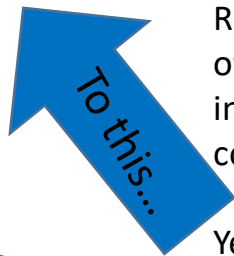
Science is a subject enjoyed at Riverside, however, its profile was low and lessons too structured.

Children and teachers have a firm understanding of what we expect science to be at Riverside. The shares values means EVERYBODY has been involved in the design and content and will share its success.

Teacher voice – essential to gain a clear understanding to design key principles and vision.

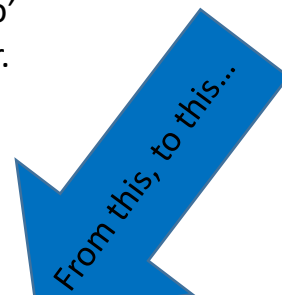
'To be involved in deciding what is important has made me want to be involved in science at Riverside. I feel valued and a part of the design for the vision. It was interesting to see other colleagues comments on what they valued too'

Year 2 ECT teacher.



Pupil voice is at the heart of success. The Science Squad created a song so that the WHOLE school have the same understanding of... WHAT SCIENCE IS!

Initial development of science principles and vision, shared with both pupils and teachers.



At Riverside, Science is...

We learn about the world around us that's for sure.

Describing, looking at experiments and more.

Knowing facts and then researching,

questioning and then exploring.

We are scientists at Riverside for sure.

'Science would be better if we did more experiments and went outside to look at nature.'
Year 3 child



SCIENCE VISION

- S**ecure scientific knowledge
- C**ultivate curiosity
- I**nvestigate! Investigate! Investigate!
- E**xplore the world and beyond!
- N**ever stop questioning' –WHY? HOW?
- C**onsolidate and deepen prior knowledge
- E**ncourage science capital and links with other subjects.

Meeting chat

"Kate Weatherall (Guest)... 16:19
Describe 2/3 teaching methods you think are an essential part of teaching science well.

Rach Cox (Guest) 16:19
Allowing exploration and addressing misconceptions

Eleanor Jones (Guest) 16:19
Using real life resources to make it practical and real situations

16:19
Questioning. Feedback. Relationships. Responsive teaching.

Beccy (Guest) 16:19
Hands on experiences, questioning, predicting

Eleanor Jones (Guest) 16:20
Seeing things in different viewpoints, e.g. debates

bensof 16:20
How to teach children to verbalise their thoughts and questions. Give them the necessary vocabulary to do this.

Nicko (Guest) 16:20
Chemistry, Physics, Biology (they ARE the three parts! ;) -

Anah (Guest) 16:20
modelling an experiment and feedback



Subject Leadership - B
Strategic support enabling improvement to take place.

Key need: better scheme of work and CPD to develop subject knowledge and delivery.

Reference date on **development log:**

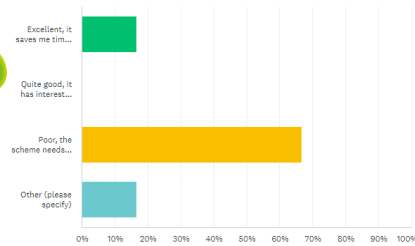
- 03.09.21
- 17.09.21
- 04.11.21
- 16.11.21
- 01.03.22

'Lessons are more exciting and practical now. We do more experiments and challenges. I like the videos of experts telling us how they use science in their jobs. I have learnt a lot of vocabulary I didn't know before.'

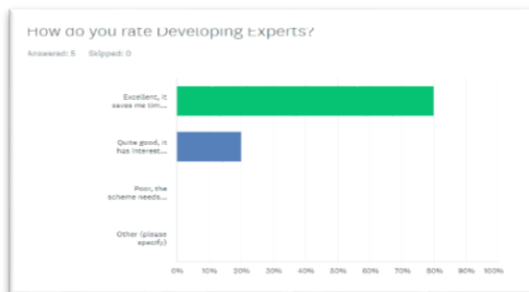
Year 4 pupil.

Pupils are more engaged in lessons and excited for science in their working week. They make use of more practical lessons and resources.

CPD, independently carried out by teachers on areas where further subject knowledge is needed. ECTs have been given guidance on how/when to undertake training. Certificates are then obtained.

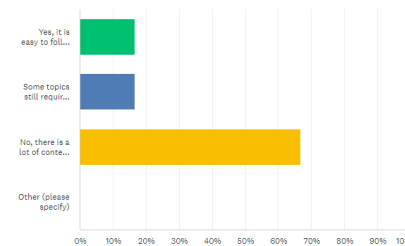


Majority: Poor, the scheme needs a lot of adapting to teach it properly.

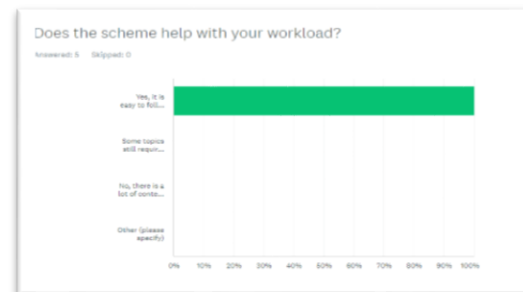


Majority: Excellent, it saves me time and children enjoy the lessons.

Teachers confidence in delivering science to a high standard is now evident. More practical experiments and focused questioning is being used in lessons.



Majority: No, there is a lot of content so time is spent planning for my lessons.



All: Yes, it is easy to follow and plan for lessons.

'Developing Experts I love, makes it so clear and simple to follow. Love that it brings in real life people as well so we can see science in action. I love the videos of the investigations as it helps when planning exactly how to do and what equipment to set up, that's what I need to improve.'

Year 3 teacher.

The Switched on Science scheme is in place, however it is broad and in need of adjusting to teach it to the standard we want.

At the beginning of the spring term, we trialled the Developing experts scheme. Teacher's voice was valuable to the decision making process.





Subject Leadership - C

An effective monitoring and improvement cycle that informs development in science.

Key need: Clear working walls for children to be able to use. Clear progression in books.

Reference date on **development log:**

- 07.10.21
- 19.11.21
- 08.12.21
- 16.12.21
- 24.01.22
- 26.01.21
- 14.02.22
- 18.02.22
- 02.03.22
- 06.05.22

'The feedback celebrated and shared success with everyone, which gave everyone a sense of achievement. The general actions for development meant everyone was on the same page and treated as equal.'

Year 4 ECT

➤ **Year 2**, there is an amazing amount of scientific writing going on. The worksheets used are relevant and achievable for the class. Again, some amazing tweeting going on. I loved talking to your science squad members about what is alive, not alive and used to be alive. Your use of scientific evidence shows children's understanding and enjoyment - BOOM!

➤ Please ensure vocab is at the heart of your lessons. With the new scheme giving about 5 key words each lesson, make sure they know and understand at least one NEW one each week. This can then be added to your vocab tree. Year 2 uses actions to help them remember, this is a great tool.

Specific yearly feedback stating strengths and areas for development.

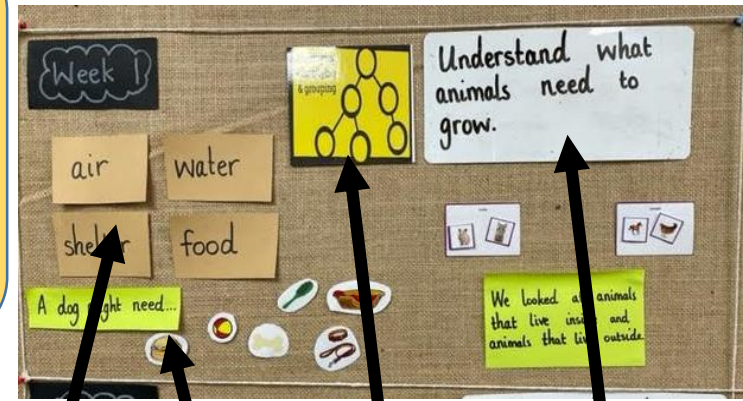
Teacher voice highlighted the need to clarify our working walls so only relevant information is displayed. They are added to weekly within the lessons, celebrating work and embedding key learning.



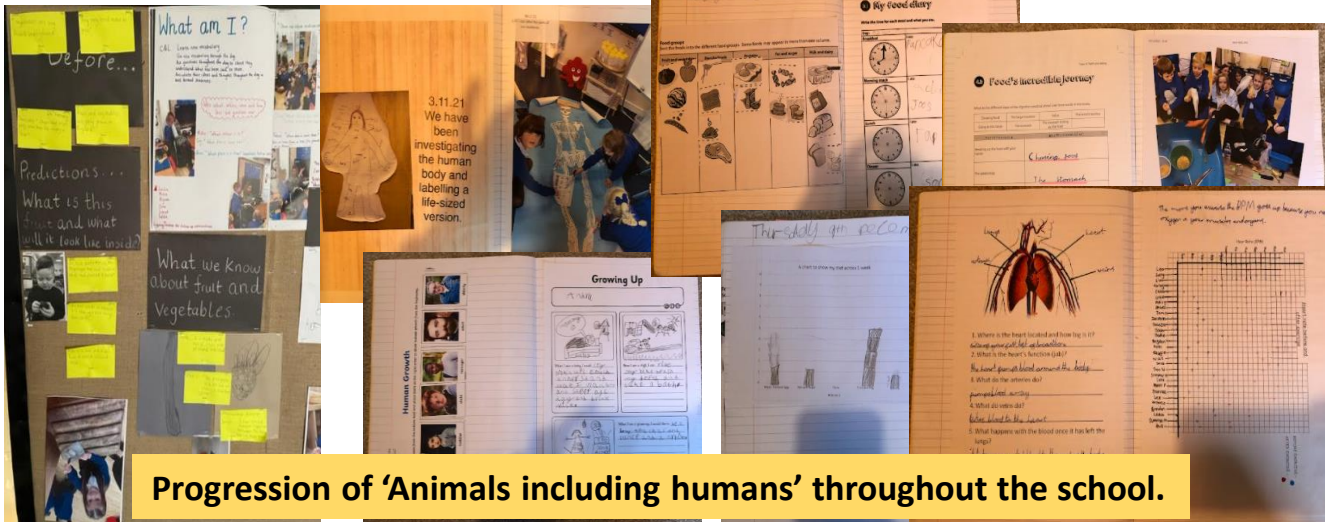
'The displays were always too crammed and difficult to read from our seats'



'Now they are clear, ordered and only have relevant information, like: vocabulary, key learning and interesting facts that we don't forget.' Year 6 child.



Vocabulary
Key facts
S. Enquiry type being learnt
Learning intention

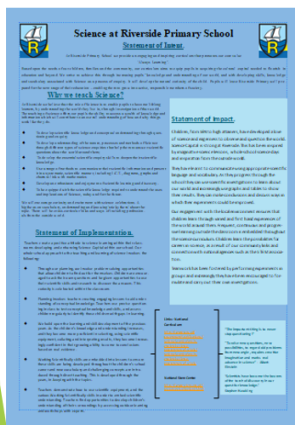


Progression of 'Animals including humans' throughout the school.

Progression is clear in books and working walls demonstrating the learning and key concepts throughout the school from foundation stage to Year 6. There is evidence of s.enquiry, investigation, recording and evaluating. Children are able to make links from previous learning.



Shared 'intent, implementation and impact' for science.



"The important thing is to never stop questioning!"

"To raise new questions, new possibilities, to regard old problems from new angle, requires creative imagination and marks real advance in science" - Albert Einstein

"Scientists have become the bearers of the torch of discovery in our quest for knowledge." Stephen Hawking

Teaching - A Engagement with professional development.

Key need: Teacher subject knowledge. Work load and wellbeing.

Reference date on development log:

- 10.10.21
- 13.10.21
- 19.10.21
- 06.11.21
- 19.11.21
- 30.11.21
- 07.12.21
- 05.01.22
- 18.01.22
- 25.02.22
- 01.03.22
- 28.03.22
- 05.05.22

'I feel that I have gained a lot of support in teaching science. This was not a subject I was most comfortable in so the Reach Out CPD, subject leader guidance, new scheme and team teaching has helped a lot' Year 1 teacher.

Developing Experts

Developing Experts - Progression of Knowledge Document

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Animals, including humans	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals Identify and name a variety of common animals that are carnivores, herbivores and omnivores Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	Notice that animals, including humans, have offspring which grow into adults Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat Identify that humans and some other animals have skeletons and muscles for support, protection and movement	Describe the simple functions of the basic parts of the digestive system in humans Identify the different types of teeth in humans and their simple functions Construct and interpret a variety of food chains, identifying producers, predators and prey	Describe the changes as humans develop to old age Recognise the impact of diet, exercise, drug and lifestyle on the way their bodies function	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Recognise the impact of diet, exercise, drug and lifestyle on the way their bodies function Describe the ways in which nutrients and water are transported within animals, including humans

Clear progression map.

'The 1:1 meeting with the science lead has reassured my planning and delivery is high quality. We discussed the planning on DE and how to use it with cross-curricular subjects.' Year 4 ECT.
'We used graphs in maths like we do in science to show results.' Year 4 child.

'Kate has transformed science this year! Outstanding leadership.' Anonymous staff shout out board in the staff room. Teachers are now so much more confident and feel they have clear guidance in delivering high quality science.

'Myself and the children are more confident in our subject knowledge. We refer to this knowledge organised weekly to recap and embed learning.' Year 2 ECT



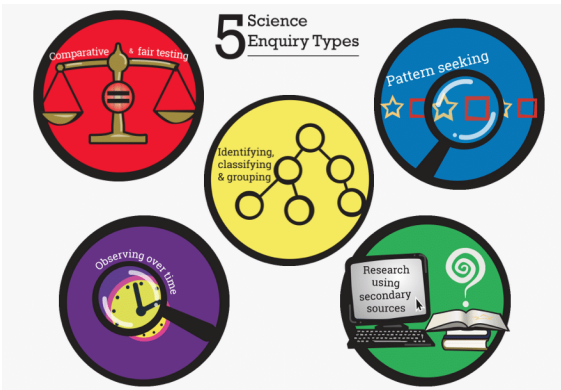
Teaching - B

Use of a range of effective teaching and learning strategies.

Key need: To embed the scientific enquiry skills. To use a range of teaching strategies.

Reference date on development log:

- 17.01.21
- 20.01.22
- 13.10.21
- 06.11.21
- 07.12.21
- 08.12.21
- 20.01.22
- 25.01.22
- 01.03.22



Introduce new science enquiry type symbols across all key stages so that children are familiar with them from an early age.



Introduce new science scheme DE.

Empowering teachers to teach science more confidently is at the core of our unique science curriculum teaching platform. Designed for children aged 4-14 years, we provide teachers and schools with access to more than 700 online science lesson plans that come with practical experiments, worksheets and assessment for learning activities fully mapped against the National Curriculum.

Curriculum Fields

National Curriculum

Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them

working Scientifically Skills

Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate

Clear signposting to the scientific skill being taught for every lesson, making it easier for teachers to identify and highlight during lessons.

Riverside Adders @RPS_Adders · Mar 11

We LOVED this session! What a great way to get us thinking about light ready for our new science topic too. Thank you to @allaboutstem #BritishScienceWeek #riversidesciencesquad Thanks also to Mrs Weatherall for arranging this fun event. @Riverside_Pri

Riverside Primary @Riverside_Pri · Mar 11

@RPS_Adders have enjoyed their STEM session with @allaboutstem. We learnt about renewable energy, made circuits and looked at safety as scientists - we did like Michelle's choice of glasses. Thank you for our new book all about solar energy. 🌞



Outside agencies bringing current science issues to life through high quality texts.

Brambles @RPS_Brambles · Nov 30, 2021

Today in science we focused on our sense using our ears (sound). First, the children made their own listening ears. Next, the children took part in a listening walk inside and outside of the building #RiversideScienceSquad



SEND children are interested and on task during hands on investigation and sound walk around outdoors.

New technology bought into the classroom to engage and excite children.

Riverside Kingfishers @RPS_Kin... · 1h

Year 6 had fun exploring the circulatory system today using Curiscope! Did you know, the heart will beat 115,000 times a day?! #riversidesci @Riverside_Pri





Teaching - C

Regular and safe use of up-to-date resources.

Key need: science resources need to be relevant, accessible and of high quality. To engage children in science through quality texts and the outdoors.

Reference date on development log:

- 28.10.21
- 29.10.21
- 07.12.21
- 08.12.21



Science resources cupboard. Sept 2021.



Audit of all current working resources.

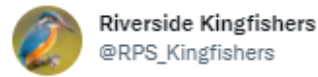


From the audit we were able to identify items that needed replacing, replenishing or missing. They were ordered where needed from teacher feedback.

Items are grouped and displayed so that they are easily retrieved and maintained.



To widen research skills from the usual 'Google search,' the Science Squad created a bank of must have science texts that we distributed to all classes ahead of their next topic. We now have a science library in each class where children can access secondary resources to gain information.



@STEMclubs finding facts about electricity on #WorldBookDay and reading recipes to create electric dough! @Riverside_Pri

4:48 PM - Mar 3, 2022 - Twitter for iPad

Outdoor learning is now embedded from nursery through to Y6 – involving experts to enhance science capital.



Riverside Bluebells @RPS_Bluebells - Mar 14

Bluebells had a special visit from our very own Mr Egan today to learn about allotments. They then had the opportunity to plant their own vegetables so we can watch throughout the season as they begin to grow into a sustainable food source! @RPS_Bluebells #riversidesciencesquad





Learning - A

Children are taught to use different enquiry types to answer scientific questions about the world around them, using scientific enquiry skills.

Key need: Enquiry skills need to be developed and embedded from an early age.

Reference date on **development log:**

- 13.10.21
- 19.11.21
- 07.12.21
- 08.12.21
- 27.01.22
- 01.03.22
- 15.03.22

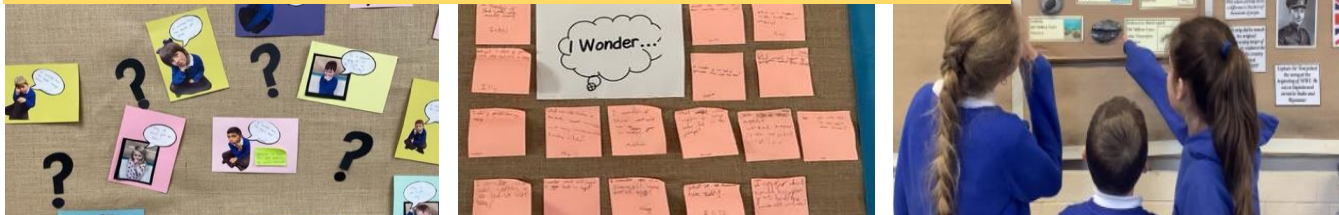


We have been so excited today to learn about life cycles. We were astonished to see a baby lamb and a baby calf being born 🥰🥰🥰🐑🐄
#riversidesciencesquad @NFUEducation



Children prepared questions for farmers about animals and life cycles, using what they have learnt already.

Introduction of the 'I wonder wall?' encouraging children to ask questions throughout the topics. Developing science enquiry skills.



Children are now more confident and ready to question what is happening and ask WHY? They have a better range of skills to find their answers.



Riverside @RPS_Otters · Mar 15
Our book this half term is Oliver's Vegetables. Today we went into our allotment and planted our very own onions. We can't wait to take care of them and watch them grow. @Riverside_Pri #RiversideScienceSquad #BSW22



Using quality story books to develop questioning that they can later have answered by experts during outdoor learning.





Learning - B
The purposes of science assessment and current best practice.

Key need: Assessment and marking is consistent across the school.

Reference date on **development log:**

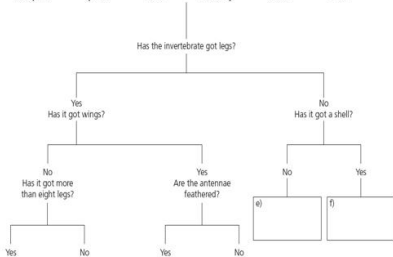
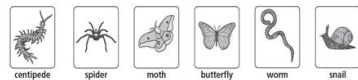
06.11.21
12.05.22
26.05.22

This year we are trialling a simple assessment of overall understanding of the unit. The idea is that this will be passed up to the next year groups so clear loss of learning can be detected.

Topic 1 Classifying living things Total marks /35

Question 1

Complete this classification key.



Unit Knowledge Test Year 6: Light

1. Match the key word with the definition by drawing a line between them. (1 mark for each correct match-up)

An object or material that allows light to pass through it easily.	translucent
An object or material which doesn't allow light to pass through.	transparent
An object or material that allows some light to pass and scatters light rays.	opaque
To make an image larger.	magnify

2. Answer these questions about some of the key words in this unit. (1 mark per answer)

a) What is an angle of incidence?

b) What is an angle of reflection?

3. Complete the diagram and label. (3 marks for correct diagram, 1 mark per correct label)

Labels:
• Normal
• Angle of Reflection
• Reflected Ray

Compare materials of different transparencies

A. _____
B. TRUE FALSE
C. Pupil cornea iris
Pupil cornea iris
Pupil cornea iris
D. 1 2 3 4 5 6
E. 1 2 3

Short summative quizzes inform teachers on pupils understanding and highlight areas for further teaching.

Each unit comes with an end of topic assessment.

Previous science assessment was uninteresting and confusing especially for SEND pupils.

It is now more detailed and consistent with what has been learnt.

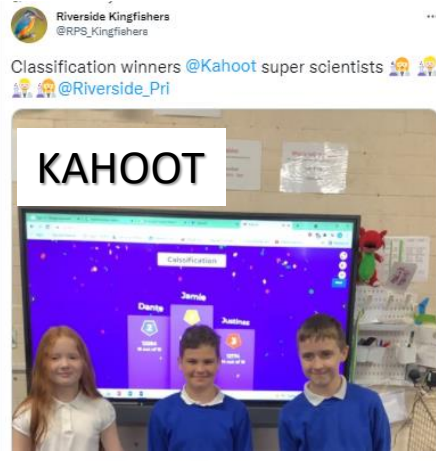
Developing Experts has a short quiz that we use at the start of every lesson to consolidate previous learning.

Other assessment strategies used:

Year 6 Science Assessment Record
© Centre for Industry Education Collaboration

record_entering '1' will turn the cell green (target met)

	Bogdan	Ava	Harlie	Summer M	Justinas	Caleb
name and describe the functions of the main parts of the circulatory system in animals (Y6 Animals)						
describe the effects of diet, exercise, drugs and lifestyle on how the bodies functions (Y6 Animals)						
name, locate and describe the functions of the main parts of plants, including those involved in reproduction and transporting water and nutrients (Y3 Plants / Y5 Living Things)						
use the observable features of plants, animals and micro-organisms to group, classify and identify them into broad groups, using keys or other methods (Y6 Living Things)						
construct and interpret food chains (Y4 Animals)						



Riverside Kingfishers @RPS_Kingfishers - Nov 26, 2021
Who Wants To Be A Millionaire - Riverside Science style! So far we are on £20,000 can we get to a million? #RiversideScienceSquad



Who wants to be a millionaire



Different forms of summative assessment, engaging children and assessing learning taking place.



Learning - C

The importance of, and strategies for, developing all children's science capital.

Key need: science capital needs to be embedded and celebrated.

Reference date on development log:

- 25.01.22
- 11.03.22
- 14.03.22
- 15.03.22
- 18.03.22
- 22.03.22
- 04.04.22
- 15.05.22

'We would like to have real life people in to show us how they have used science to get really good jobs.' Science Squad member - Sept

Teachers are encouraged to bring an aspect of science capital to every topic. Whether through a specialist, off site visit or online tools.

During this unit you will hear from the following industry experts:

Name	Job Title
1. Jo Boocock	Infrastructure Maintenance Delivery Manager
2. Danny Hawkins	Facilities Delivery Manager
3. Rory Dickerson	Senior Engineer
4. Mullai Sathiyarayanan	CAD-GIS Coordinator
5. Vineet Bhamra	Signalling Project Engineer
6. Jane Byers-Woods	Assistant Project Manager

Developing Experts includes videos from professionals in EVERY lesson. This gives an insight to careers and skills developed through science.



Check for danger
Response "HELLO!"
Call for help
Airway - all clear
Breathing
CPR

Vital learning today with @MSE_Schools @MerPoiWirral #MiniPathfinder @Riverside_Pri



'I now know how to save someone who might be in trouble.' Y6 child.

'I would love to be a Dr when I'm older. Listening to the paramedic was so interesting and I love science' Y5 child.

As part of our inspirational speaker series the children loved hearing Mrs Wisbey talk about her job as a paramedic saving lives!



6:38 PM · Oct 13, 2021 · Twitter for iPad



Riverside Conkers @RPS_Conkers · Mar 18

Monica kindly visited us with her lovely guide dog Teri. We have learnt about how guide dogs help to keep people safe that have limited vision. We got to ask lots of questions and even got to have a stroke. 🐾 Thank you so much!
#riversidesciencesquad @Riverside_Pri @guidedogs



2 4 19



Ashleigh Jayne @ajmoorex · Mar 18

Thea said this was her favourite lesson today and she loves learning about animals because she wants to be a vet 🐾🐾

1 4



Parents comments on Twitter highlight they have noticed the importance of science capital in the classroom.

It is now clear to see science in every area of the curriculum. It is evident in books, on Twitter and from talking to children.

Wider Opportunities - A Cross-curricular planning that links science to other areas of learning.

Key need: science to be included across the curriculum subjects.

Reference date on development log:

- 18.11.21
- 22.11.21
- 01.12.21
- 05.01.22
- 27.01.22

Unit summary

This unit gives learners the opportunity to star-gaze by learning more about the earth and space. Starting on earth and understanding our position in the solar system, before expanding out to the moon, the solar system and exploring the Big Bang theory, our unit on Earth and Space covers all the requirements of the National Curriculum programme of study. Opportunities within this unit include building a solar system model, taking part in games and role-plays and measuring gravitational force.

New scheme clearly states where science can be taught within other areas of the curriculum..



Geography / current news

Riverside Willows @RPS_Willows
The Eco Warriors in Willows are sharing ways to look after our planet. Don't ask how many times people have pressed that switch expecting something to happen on the cardboard telly! #BSW22 #RiversideScienceSquad @Riverside_Pri #AlwaysARiversider



Riverside Acorns @RPS_Acorns - Dec 8, 2021
Morning and Afternoon Nursery have loved retelling the Christmas story and constructing a stable for baby Jesus! @Riverside_Pri #RiversideScienceSquad

Riverside Otters @RPS_Otters - Feb 28
We are comparing the length of vegetables! @Riverside_Pri

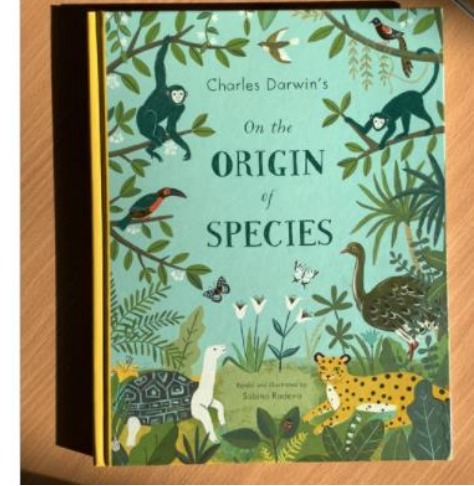


Design Technology



Riverside Kingfishers @RPS_Kingfishers - Mar 14
Embedding evolution in science through English. What a lovely book this is by @sabina_ #Riversidesciencesquad #BAW22 @Riverside_Pri @LiteracyCounts1

English



'Studying Darwin in English is so much easier now that I know more about him from science. I don't have to do as much research as we have already done it.'
Year 6 child

Riverside Conkers @RPS_Conkers

Yesterday year 1 learnt some new vocabulary; opaque and transparent. We then found things in our classroom that were opaque and transparent and labelled them for others to see. #Riversidesciencesquad



Computing

Well done to our super #STEMclub this week who have used @purpleMash 2Design and Make to design lovely hedgehog habitats. Well done! @Riverside_Pri #RiversideScienceSquad



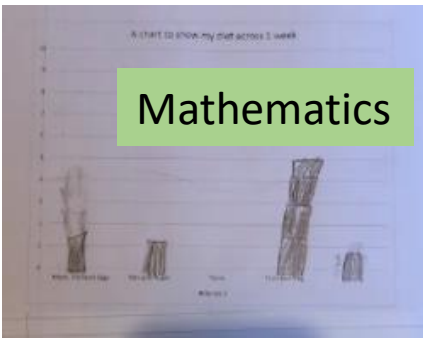
4:23 PM - Feb 3, 2022 - Twitter for iPad

Riverside Otters @RPS_Otters - Jan 21
We are learning all about how animals adapt in the winter. Look at this superb picture of a butterfly migrating. @Riverside_Pri #Riversidesciencesquad

Art



Mathematics





Wider Opportunities - B
Provision of a variety of opportunities that deepen and extend learning.

Key need: science club to challenge greater depth, pupil premium pupils.

Reference date on development log:

- 18.11.21
- 22.11.21
- 01.12.21
- 05.01.22
- 27.01.22

Previously, science had little profile and was not celebrated in the way it should. There were no additional opportunities for pupils to be challenged outside the science lesson.



Science Squad

Creation of The Science Squad. To enhance pupil voice and encourage enthusiasm for the core subject.

Riverside Primary @Riverside_Pri - Feb 10
It was a cold one tonight at #STEMclub making Hedgehog habitats. We recycled some old boxes and camouflaged with Christmas tree cuttings. Inside is cozy and warm for them filled with straw and cat food as a snack. Hope some hedgehogs come stay at Hog Hotel #RiversideScienceSquad



STEM club

A retweet and comment by Paul Strurgess (tallest man) himself! Got the Conkers going bonkers.

This week we have learnt about the UK's tallest man @paulsturgess_ and measured ourself next to a chalk version on the playground and compared his height to ours. We also put ourselves in height order.



2:22 PM - Nov 17, 2021 - Twitter for iPad



'STEM club is so interesting. We cover all different topics like: making habitats, planting seeds, green screen, cookery, electricity and so much more. I love it, it is the best after school club I've been to' Year 3 child.

Home challenges

@Riverside_Pri #riversidesciencesquad ollys elf eddie claimed up a pile of presents he used as a ladder to get back on the Christmas tree



Riverside Primary @Riverside_Pri

Amazing Archie so glad LFC Teddy made it back on to the stair. Excellent use of recycling and some very clever engineering @allaboutstem #riversidesciencesquad

John Weatherall @jayjayweathers - Dec 1, 2021
Elf's friend LFC teddy fell off the stair! Archie (Larks) built him a pole to climb back up from recycled tubes. #RiversideScienceSquad @Riverside_Pri @RPS_Larks



Riverside Primary @Riverside_Pri

Oh no! Poor Elf is in trouble! Use your super science skills to help him out? Complete your challenge at home and take lots of photos. Don't forget to Tweet us your results using — #RiversideScienceSquad Can someone at home help you out? @allaboutstem #AlwaysARiversider



We Are Scientists at Riverside That's For Sure!

Continuing on from Science week, the whole school took part in one jam-packed day enjoying exciting experiments and activities when we were visited by Stem Science on Tuesday. Mrs Weatherall and Mrs Ellison planned such a fun day and we explored, questioned and questioned some more! Just look at what immersing yourself in science looks like! [Click here.](#) [Here.](#)
The ScienceSquad then continued their investigating... chasing rainbows! [Click here.](#)

#RiversideScienceSquad



STEM day – theme GROWTH

British science week has often been overlooked or missed at Riverside. Having an outside agency come and deliver expert lessons was unheard of.

We made British science week a priority this year with bids placed to secure funding for the activities planned. The aim was to develop the profile and excite the children in science.

Wider Opportunities - B

Provision of a variety of opportunities that deepen and extend learning.

Key need: Engage parents/carers and outside links to enrich science learning.

Reference date on development log:

22.03.22

‘Thank you. You have really inspired my boy. He doesn’t enjoy school but today he came home excited, telling me all about your science day’
Year 4 parent.



Riverside Bluebells
@RPS_Bluebells

What a fantastic time Year 2 had in their science workshop today! We learned all about growth and now have a class full of budding scientists. [@Riverside_Pri](#) [#riversidesciencesquad](#)



‘That was unbelievable! I want to be a scientist’ – Year 2 child



Teaching - C
Regular and safe use of up-to-date resources.

Key need: To engage children in science through the outdoor learning.

Reference date on development log:

- 28.10.21
- 29.10.21
- 07.12.21
- 08.12.21

@STEMclub started again tonight with a fresh group of stem stars. Making @Riverside_Pri greener 🌱 planting herbs, sunflowers and so much more to brighten up our amazing school. #RiversideScienceSquad



Riverside Conkers @RPS_Conkers · Apr 6
Ks1 have had the most amazing experience at the farm today. We used the maps to find out where we were going and got to see lots of animals we have been learning about in science. #riversidesciencesquad @Riverside_Pri



Riverside Otters @RPS_Otters · Jan 13
Remember when we sketched an autumn tree? We have visited the same tree again to look at what has changed since winter arrived. #letstalkaboutchange #changingseasons ❄️❄️❄️ #Riversidesciencesquad @Riverside_Pri



Riverside Kingfishers @RPS_Kingfishers · Mar 24
Chasing rainbows 🌈 or refracting white light to show the spectrums of colour that makes up light? What a great investigation in the #RiversideScienceSquad @Riverside_Pri



*** The planting begins... finding out what our potatoes need to grow in abundance. @Riverside_Pri #AlwaysARiversider #RiversideScienceSquad



The Willows inclusion base celebrating their outdoor learning on Twitter – proud of what they are achieving.

Outdoor learning is very prominent in the EYFS teaching, however, it is not constant within KS1 and KS2 teaching. A forest garden is provided, but only used for topics such as animals including humans and the environment around us.

‘we would like to use the forest garden more in our lessons rather than worksheets and videos’ Science Squad KS2 member

The new scheme signposts where outdoor learning can be delivered. Forest and beach school experts on hand to give advice.

Inclusion base to incorporate more outdoor learning for engagement and behavioural learning.

Outdoor learning is now more prominently used within teaching throughout the school. The forest garden is being used more purposefully as well as other areas of the school and surrounding area. Higher up the school are now using the local area to its full potential with the Mersey river being on our doorstep and an urban farm just a short bus ride away.



Subject Leadership - A

Clear vision for science, created and implemented by teachers and children, through principles for teaching and learning.

Key need: pupil voice to be heard and acted upon.

Reference date on **development log:**

- 07.10.21
- 10.11.21
- 11.11.21
- 12.11.21
- 17.11.21
- 19.11.21
- 22.11.21
- 29.11.21
- 08.12.21
- 27.01.22
- 18.02.22
- 04.04.22

Pre-PSQM there were no science clubs, science council or monitoring of any kind regarding pupil voice

New science council formed (The Science Squad). Pupil surveys carried out at the start, midway and end of the year. Pupils spoke directly to governors, head and deputy and a local authority monitoring session about science.

Now pupils feel they have more involvement in the design and delivery of science at Riverside. They feel valued and their work is celebrated. Outcome from meetings with governors, head and local authority showed that children enjoy and are enthusiastic about science and that they feel they have learnt a lot more.

'I look forward to science every week. Mrs Nicolls makes it fun and interesting. We have looked at lots of different things. My favourite has been the animals and bugs'
Year 1 child

'We love going outside to learn about the world around us. We even go out in the rain! My favourite thing was planting seeds and watching them grow'
Nursery child

'Being a part of the Science Squad has made me feel important. I have been asked what my opinions are and how we can make science better at school. We even got to share our ideas with Mrs Lahive (head teacher) and some important people!'
Year 5 child.

'I've loved having experts in to show us what they do in their work. We've heard from an audiologist, electrician, paediatric nurse and a paramedic. My favourite was the audiologist'
Year 4 child.

'Bringing in specialists has really developed the children's science capital. This wasn't something we were encouraged to do before'
Year 4 teacher.



Celebration of science at Riverside Primary

Science had little profile, little excitement or clear structure. We followed a complex over-prescribed scheme and teachers had little CPD to deliver the subject to its full potential.

New scheme introduced. Teacher and pupil voice designed the principles and vision. Engagement and profile is developed through Twitter social media.

'Being able to see what my child has been doing in school this year has been great. We have been able to discuss learning and topics he's been covering. Also being able to join in on home holiday challenges has been fun, sharing his work and getting replies really encourages my child' Parent comment

'I am so proud of where science is now to where it began back in September. Kate has worked tirelessly to make it a success in all areas. The profile, enthusiasm and engagement from children is evident in books, pupil voice and when visiting lessons. Pupils have demonstrated a new love of learning in science, this is down to how it is communicated with society through Twitter, the after school science club and the newly formed Science Squad Council. I very much look forward to see what next year brings.' Head teacher

'Our science curriculum has been completely transformed this year by Kate and her outstanding subject leadership. The profile of science has grown significantly amongst the children, teachers and parents and is now a firm favourite.' Deputy head teacher

'The highlight has been the ability to see, share and celebrate everyone's success over Twitter. As a full time class teacher, it is difficult to know and join in on other classes activities. However, to be able to see it shared with everyone via social media means that I feel so much more involved – being able to comment or revel in an achievement with a child on the schoolyard, or a parent at home time has been the best aspect of this year.' K. Weatherall Science Lead

Nikki Humphreys @NikkiGoode89 - Dec 5, 2021
 @Riverside_Pri #RiversideScienceSquad @RPS_Otters Jack tested out different materials to see what would be waterproof to make his umbrella for Santa sleigh to keep the presents dry



'Kate is an inspirational subject leader who demonstrates innovative practice within science. She clearly articulates her subject to parents, governors and colleagues, whilst ensuring that the pupil learning and scientific enquiry are the core drivers of her curriculum intent. Riverside now has a well-sequenced, challenging and research based science curriculum which begins in EYFS and builds through to KS2.' Governor

Using #RiversideScienceSquad on Twitter has allowed easy access to all the learning going on throughout the school and at home. Teachers, pupils (present and past) and more importantly parents/carers have been involved in science at Riverside. Parents/carers have been able to comment and share the excitement with school via this means.

Wow the elf science challenges are coming in thick and fast in Year 2, well done! #riversidesciencesquad



11:03 AM - Dec 7, 2021 - Twitter for iPad

M Tweet your reply Reply

Riverside Primary @Riverside_Pri - Dec 7, 2021
 Replying to @RPS_Bluebells
 Oh they are very impressive. We love the variety and skills that have been used. Super STEM skills @allaboutstem #deSTEMber

Riverside Larks @RPS_Larks - Dec 8, 2021
 The Larks created food chains and learnt about producers and consumers. #MiniScientists #RiversideScienceSquad @Riverside_Pri



Year 4 creating food chains 15