

The crest of Stanley Park Junior School is a shield divided into four quadrants. The top-left quadrant is yellow with a large grey letter 'S'. The top-right quadrant is light blue. The bottom-left quadrant is light blue. The bottom-right quadrant is yellow with a large grey letter 'P'.

# Stanley Park Junior School

PSQM application  
June 2015



# Science principles a1 a2 a3 a4

Science teaching is good at our school when...

- activities and resources are exciting
- children are inspired and enthused
- children ask questions and are encouraged to explore the answers



Staff were asked what made science teaching good – this is what we came up with



# Planning

a1 a2 a4 c1



Extract from the Kent scheme purchased to support the new curriculum.

Kent Scheme of Work for Primary 5

## Year 4- Electricity

dy 2014

that run on electricity

Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches

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- Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit
- Recognise some common conductors and insulators, and associate metals with being good conductors.

The learning journey – 'Electricity'

Year group	Statutory Requirements from the Programme of Study
4	<ul style="list-style-type: none"> <li>Identify common appliances that run on electricity</li> <li>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches</li> <li>Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches</li> <li>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>Recognise some common conductors and insulators, and associate metals with being good conductors</li> <li>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used</li> <li>Compare and give reasons for variations in how components function, including the brightness of bulbs in the on/off position of switches</li> <li>Use recognised symbols when representing a simple circuit in a diagram</li> </ul>
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## Example of year 4 planning

Learning Objectives	Starter	Introduction	Vocabulary
L.O. To be able to find patterns between the pitch of a sound and features of the object that produced it.  To be able to use a scientific enquiry to answer a question.	Chdn to respond to marking from last lesson.  Re-cap on how sounds are made louder? Relate to energy and size of vibrations.	<b>What is the pitch of a sound?</b> <b>Explore – How do we change the pitch of a sound?</b>  In this session the children should learn that as well as loudness we can change the pitch of a sound. Some might make the relationship between the speeds of the vibrations and the pitch produced.  Use some 'Boomwackers' to demonstrate pitch. Different children could each have a Boomwacker which they hit against the table. The class must try to place them in the correct order from lowest to highest sound. Encourage the use of comparative and superlative words.	Sound Vibration Air Medium Sound wave Compression Energy Pitch frequency

Example slides from cpd led by coordinator on planning

## Example of long term plans from year 5

Year 5 Long Term Plan 2014-15

National Curriculum objectives for literacy and maths are being followed throughout the year.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Sum
Class Novel (one a term)	James & Giant Peach	James & Giant Peach	The Switch	The Switch	Holes	Holes
Science	Earth and Space	Forces	Living things and their habitats	Animals, including humans	Properties and their materials	

Planning - Kent scheme - Saved in your planning drive

Statutory Requirements from the Programme of study

3	<ul style="list-style-type: none"> <li>Identify that animals, including humans, need the right types and a nutrition, and that they cannot make their own food; they get nutrition from their food</li> <li>Identify that hurr protection and mo</li> </ul>
4	<ul style="list-style-type: none"> <li>Describe the sir humans</li> <li>Identify the diffie</li> <li>Construct and in predators and pre</li> </ul>

Key vocabulary

Scientific Language  
Pupils should read and spell scientific vocabulary on spelling knowledge

Digestive system - oesophago, stomach, acid, sma  
Protein, vitamin, mineral, carbohydrate, fats, energy  
Teeth - Incisors, canines, premolars, molars  
Function  
Foodchain - producer, consumer, predator, prey

These should be classroom, set 1 used for exam

Remember to include different types of testing

Identifying and classifying

Research

Fair testing

Pattern seeking

Changes over time

Must be modelled and identified on plans

Year 4 Spring  
Topic: Sound

Objective

I can review what I already know, ask questions about the topic and decide how I'll answer these.	
I can understand how sound impacts our lives.	
I can describe in writing how I felt during a day without sound.	
I can identify different ways of communicating and how it affects us.	
I can identify how sounds are made, associating some of them with something vibrating.	
I can recognise that vibrations from a sound travel through a medium to the ear.	
I can find patterns between the pitch of a sound and features of the object that produced it.	
I can find patterns between the volume of a sound and the strength of the vibrations that produced it.	
I can recognise that sounds get fainter as the distance from the sound source increases.	
I can make systematic and careful measurements with a data logger.	
I can research designs for a musical instrument to include from different places around the world.	
I can develop/plan a musical instrument with a purpose.	
I can evaluate my design for a musical instrument	
I can use my knowledge of sounds and musical instruments to play and perform.	
I can recognise moods created by different pieces of music.	
I can think about sound in a wider context - motivation, damage, peer pressure	

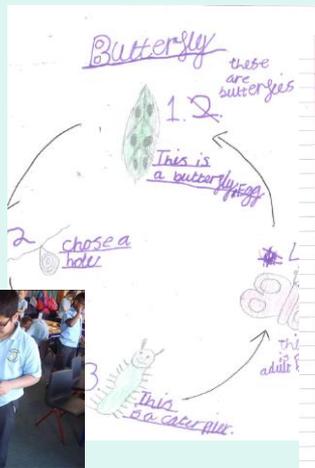
Year 4 Medium term plan

Learning journey from year 4



# Creative teaching

a1 a3 a4 a5 b2  
b3 c1 c3



Friday 20<sup>th</sup> March  
L.O: Understand the  
difference between 'creatures' by  
Insect - butterfly

Eggs  
Normally, the  
egg is under  
a leaf.

Hatching  
Caterpillars have  
to eat their  
way out of  
their egg.

Youth  
Young  
caterpillars shed  
their skin  
several times.

Monday 11<sup>th</sup> May 2015  
L.O: Explain how some magnets only attract some materials.

Conclusion  
I found out that some magnets only attract to some materials or not anything to magnets.

Can you name 2 materials that are not magnetic  
springs + wire

Pipes  
Pipes can look like plants

L.O: explain what seeds are dispersed

Method of dispersal	Describe how the seed is dispersed	Example of seed

Wind   Animal food   Catching a lift  
Bursting   Water   Sling and roll


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Examples of differentiation  
From years 3 and 5.



Investigation to see if all magnets have the same strength

Do you think all the magnets on your table have the same strength? No

Which do you think could be the strongest? Neodymium

Which do you predict (guess) will be the weakest? Bar and Red

Test the magnets to record how many paperclips they hold in a chain before the chain breaks.

Record your results:

Type of magnet	Number of paper clips it holds in a chain
Large horseshoe magnet	20
Red bar magnet	30
Blue and red bar magnet	10
Neodymium (tiny magnet)	20

What I learned from the experiment  
The neodymium magnet is the strongest. It holds the most paperclips. The bar magnet is the weakest. It holds the fewest paperclips.

Wrap one of the magnets in a piece of newspaper.

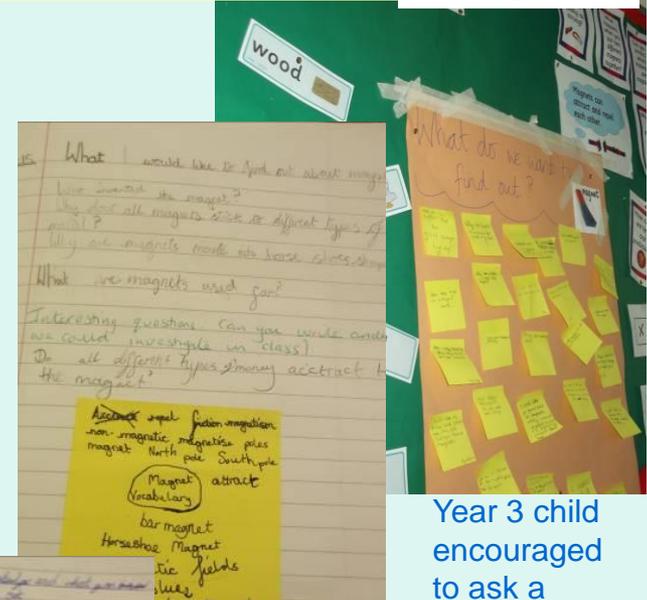
Teaching at SPJS is creative and designed to enable all learners to achieve

# Child led learning

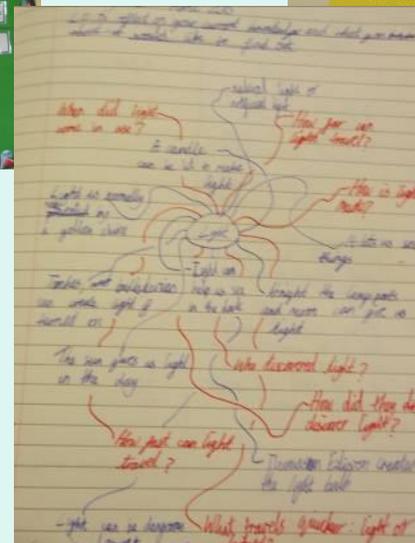
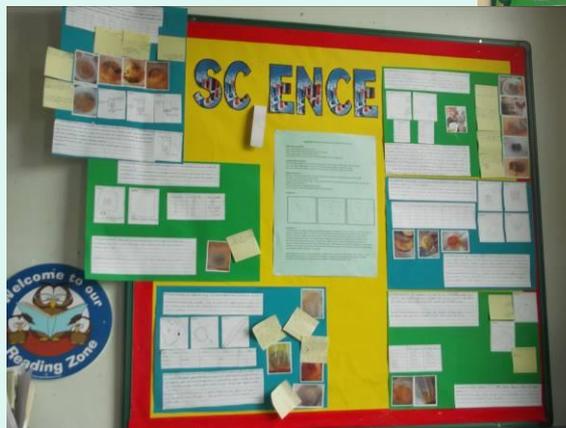
a3 a4 b2 c1 c3



Children are encouraged to ask questions and consider how to find the answers. From year 3 they are challenged to ask scientific questions. The boards show brainstorms about topics and questions the children wish to find the answer to.



Year 3 child encouraged to ask a scientific question



Eg of a brainstorm showing the pupil's known facts in blue and questions in red

# Pupils' voice

a1 a2 a3 a4 a5 b2 c1 c3



I like doing fun experiments and learning interesting facts

Year 4 pupil

I like the fact it is trial and error so you never know what you may find out.

Year 6 pupil

...the experiments we have done were really fun and interesting. I don't like science – I LOVE it!

Year 4 pupil

I like getting to do experiments and finding results

Year 6 pupil

I like all of it

Year 5 pupil

Everything about science is exciting and fun

Year 4 pupil

I would like to say that science the way the teachers teach it now makes it easier to understand

Year 6 pupil

Science is basically AWESOME! Because discover EPIC facts

Y4 pupil

My favourite part of science this year has been learning about states of matter because we got to try out experiments using honey and lots of other foods and objects.

Year 4 pupil

We don't do enough of it – we need to do more!

Y4 pupil

I like how it teaches me about a whole range of bits about the world around us and showing me about nature and what I could do to make an impact on the world.

Year 6 pupil

I really, really enjoy science - actually I enjoy experiments not writing down conclusions or estimates.

Y4 pupil

Children were also asked about science teaching – all enjoyed science – here are a selection of their comments

# Parents' voice

a1a4 c1 c3



What I think the school does really well ... Learning opportunities like the science family evening

Parent

Thanks for a lovely evening. Lots of science facts to feed young (and old) brains. Well done.

Just one of the many positive comments from Parents after the science evening.

What I think the school does really well ... The science evenings have been very informative.

Parent

What I think the school does really well ... I was very impressed with the science work done in SPJS

Parent

Good way to learn

Y 4 Parent

The Sex Education Parents meeting gave me the information and reassurance I needed. I realise that it is the right time for my daughter to learn about her changing body.

Y5 Parent

So well organised  
And so much fun

What I think the school does really well ... The family fun evening – science and sport were brilliant

Parent

What I think the school does really well ... The children leaving have got excellent all round knowledge. I was impressed with the science the children learn.

Parent

What I think the school does really well ... Science topics that create interest.

Parent

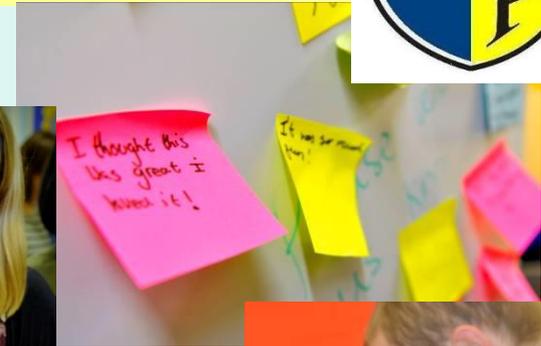
Parents were surveyed about their views about the school. There were many positive comments about science teaching being one of our strengths



# Science Family Evening a4 c1 c3



The aim of the evening was to have fun and promote science



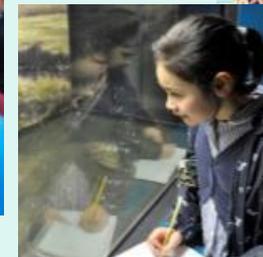
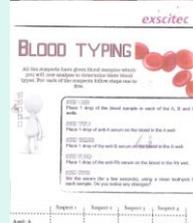
# Enrichment

c1 d2



On the 27<sup>th</sup> of November, different Year 5 students went to learn about crime scenes and different ways to solve them. First, they looked at blood types and considered what to do if the crime scene blood clotted. Then they did fingerprint detecting and compared them to the suspects' fingerprints using patterns to help recognise them. Students mostly liked looking and making strawberry D.N.A. out of a kiwi-fruit. One Year 5 pupil said, "This is really nice and it is really easy!" . It would be really educational to do these trips again because they can learn about new things in the future.

Amaasha and Brandan, 5P, and Molly and Sophie, 5S



The pupils have benefitted from trips to the zoo, STEM workshops, Kew Gardens and from workshops at the local high schools.

## Trinity S.T.E.M. link

On Friday 5<sup>th</sup> March, a few pupils from Year 5 went to Trinity School to learn about STEM (Science, Technology, Engineering and Maths.) They gave us some bags with cardboard and wooden cut-outs for making our very own wind-up propeller carts. First of all, we folded the card to make the base. After that we put in the wheels and propeller. To make it move you wind up the propeller and then let it go! After our break we started testing our carts. Most of them crashed into the wall, but some of them were brilliant. The exciting thing about testing them was seeing if they travelled the same way but turning the propeller was ever so boring. After testing in the classroom, we moved to the corridor and saw how far they went. The furthest distance travelled was 9.50m! The Trinity mini-bus took us back to school just in time for lunch.

Dara Anklesaria, Cerys Byrne, Katie Fletcher and Elliot Smith, 5F

## London Zoo trip!

Once on the coach, we travelled to London going past some famous landmarks such as The shard, St Pauls Cathedral and Big Ben. Once we arrived at the zoo, we had a quiet snack to keep us going until lunch. The first place we visited was the Gorilla Kingdom. We were all shocked to see a lady banging on the glass and scaring the gorilla, who in turn, hit the glass! This event gave us something to use for writing our own newspapers back at school! After this, we moved onto to Tiger Territory and were lucky enough to see the tiger being fed. The tiger was ravenous. There were 3 new born cubs who we got to see on the tiger cam. Next, we went to see the monkeys who were very cheeky. We then had our lunch in the sun after, we visited the butterfly house and some butterflies landed on members of our class. The penguin show was next and it was good to see the penguins so close. To finish off the trip we visited the aquarium and saw clown fish and turtles. All in all, it was a fantastic day!

Mann, Joseph and Archie





# In school enrichments

## Bones Visit

On the 5<sup>th</sup> March 2015, the year 6s from Stanley Park met a lady who collected animal bones, fur & skin. She came to tell them about her collection of specimens. It was all set up in the great hall of Stanley Park Junior School. The children were glad as visitors didn't frequently come there.



When they filed in there was a slideshow of animals and facts set up. Then the lady sent them to look at her wonderful things! They raced to grab the magnifying glasses and ran to what they wanted to look at. They all walked around gazing at the skins and spiders in the cases.

After the enjoyment was over, the year despaired when they had to leave for the break.

Once the half an hour had passed they rushed back in and stared at the dazzling array of pictures on the board. Gasps filled the room. She explained that it was about adaptations. Soon after that introduction, they had learnt all about how birds had adapted to be so light, how and why owls were so silent as they flew from tree to tree.

Then, when they were forced to leave for the last time the class had a discussion. Brian, who had learnt about antlers, commented, "I didn't know antlers fell off every year!"

Kai added, "Oh, wow that tarantula was big, scary and awesome!"

They were all asked how they thought the event went. Some confirmed it was a mad event to take part in; others claimed it was really fun and interesting.

They all told away, wheth again. Overal if I were th and worksho



a1 a2 a3 a4 c3 d1 d2



## SCIENCE: Teeth and Digestion



In Science this term, year 4 have been learning about teeth and the digestive system. The first thing we learnt about was teeth and what they help you to do. The incisors are your front teeth. They are thin and used to bite off the food. There are also canines and molars. We ate bread to work out the functions and even wrote a song about how to look after your teeth.

We carried out an investigation to see which drinks were best and worst for our teeth. We used egg shells instead of real teeth and out them in different liquids. We found sugary drinks were not good for the egg shells and water was the best!

We then learnt about digestion. We did a fun experiment where we chewed a bit of bread but then left it in our mouth and then swallowed it. It tasted sweeter because the saliva broke the bread down into sugars. I really enjoyed science this term! Louisa Goodfellow 4P.

We learnt the process that food went through by watching a funny video. We then did a comic strip of some mini-people going through the body. It was great fun! Lucia Mayorga 4P.

## 4S Class Assembly



4S's class assembly was all about how we hear. In science, we had been learning about sound and had written explanation texts about how we hear. We used this work to help with our assembly. We loved being able to co-write the assembly, including the song, with Miss McSweeney. We took the school on a journey through the ear, explaining what each part of the ear does. The ear is split into three main sections, the outer ear, middle ear and then the inner ear. The class explained how these three sections work together to process sound.

Lots of our families came in to watch our assembly in the afternoon and although we were very nervous, we loved showing them what we had been working on.

4S



## 4P CLASS ASSEMBLY

On Friday 23<sup>rd</sup> January, 4P did an assembly all about teeth and digestion. The assembly was about two explorers getting eaten, going through the digestion process and discovering all parts of the body. At the end we sang a song all about digestion to the tune of 'What makes you beautiful' by One Direction. Lots of peoples favourite part of the song was when we sang 'Mouth to the gullet to the stomach, small intestine, large intestine, rectum' and then pointed to our bottoms! The assembly went really well. We really enjoyed it and wish we could do it again.

By Lucy Rowe & Ruby McLachlan

Visitors during the year have included the "bone lady" and a Stomp workshop. Also classes have benefitted from science workshops and a science play.

# Outdoor learning

b3 d2



The school has an environmental area – the green zone complete with different habitats and a pond. There is also an off site allotment which classes can visit. Year 4 are timetabled to visit once a week - weather permitting.



## Our Allotment Day

On 11<sup>th</sup> March it was our turn to visit the school's allotment with Mrs Clark and Mrs Crowley. The allotment is a short walk away from the school.

When we arrived, the grass felt smooth and we had fresh air all around us. We took some time looking around our plot. There are so many plants! There were daffodils, onions, beans and loads more. There were a lot of weeds too. The rhubarb had grown so much even Mrs Clark and Mrs Crowley were surprised. We planted potatoes and got muddy from the damp soil. We were glad of the kneeling pads. We really enjoyed ourselves there. By Nourreen Abbas and Grace Cotton 4J

## Beautiful Butterflies!

Our teachers set up a real surprise! Little caterpillars arrived in our classes, crawling around in their plastic containers. As the days went by, the caterpillars grew and grew. Soon, the caterpillars crawled upwards to the top of their container where they formed muddy coloured chrysalises. After 2 days, Miss McSweeney placed the chrysalises into a butterfly net, some at the bottom and some attached to the side. There they stayed over the weekend and when we arrived back on Monday some of them had emerged! It was so exciting. One all the beautiful butterflies had emerged, we took them into the Green Zone to let them go into the wild.

Hanna K, 46M



# Clubs

a4



The science coordinator and Mrs Nice, TA run Science club in the winter months and Gardening club in Spring and Summer.



# Resources

4a a1 a4 b3 d1



Year 5 Science technicians in the School's new science resource area.

Example of Resource information and care sheet

**Care of magnets**

**Alnico Magnets** - these are either painted or aluminium (light grey metal) in appearance.

**Bar magnets** should be stored in pairs or back to back with opposite poles touching. If you only have one, place it on a steel sheet that will act as a "keeper".



**Horseshoe magnets** should be stored with a keeper - a steel bar that sticks to the two ends of the magnet. Or, put two horseshoes together with opposite poles touching.



If these magnets are not stored carefully the magnetic force will weaken and the magnet will no longer attract or repel.

DO NOT STORE WITH OTHER TYPES OF MAGNETS



The school is well supplied with guided reading books with science themes facilitating small group discussions and research.

Although the school's grounds are limited, there are science outdoor learning areas- the Green zone, an environmental area complete with a variety of habitats (including a pond); an offsite allotment and a polytunnel.





