Science Specific SEF Primary

# Recognising need and priorities with a primary science focus

This is a tool to assist your strategic team to reflect upon relevant and contemporary key issues in primary science. As such you will be supported to identify your specific needs so that developmental offers can directly impact on teaching and learning in your school.

The tool is structured into five themes. There is one single sheet per theme.

- Leadership,
- Teaching & Pedagogy,
- Teaching & Curriculum,
- Learning
- Wider Opportunities



Each theme can form an agenda for a reflective conversation. It is not necessary to complete all themes in the order presented. Your SDP will signpost which theme is more relevant and most pressing to you.

There is at least one challenge activity to stimulate quality thinking and allow pause to ponder before addressing the reflective questions. Alternatively you can have a go at the questions and use the activity as a way of validating your conclusions.

The goal is to have maximum one quality action per theme and these focussed actions plan to make the biggest difference. *Avoid creating a huge to do list.* Return regularly to the SEF tool as you make progress.

Funding applications from schools for CPD from the Opportunities Area: *'Science across the city'* will require school awareness of the intended difference that the funding will make. Use of this tool should help schools to define need clearly and explicitly.

| *How can we improve?* | *Questions to encourage reflection* | *If only we had….Highlight as relevant (responding to need)* | *SATC suggests* |
|---|---|---|---|
| *Leadership* | *In what ways is your science subject leader empowered with a voice?*<br>*Is the SLT confident to coach and quality assure science specific scrutiny judgements? Is monitoring feedback such as book reviews and lesson observations specific to science goals or other school policies?*<br>*How does your subject leader stay updated about primary science developments, ideas and STEM offers? Is your subject leader engaged in and contributing to collaborative practice that is useful? Does your SL want to connect with the wider community but is not sure how?*<br>*Does your subject leader worry about what to do first- do more of or stop doing? Are SL actions justified with impact evidence?* | • *regular updates*<br>• *opportunities to meet local SLs*<br>• *help to prepare for network meetings.*<br>• *frameworks and a mentor to develop effective leadership*<br>• *Science informed SLT*<br>• *Ways of being recognised as good scientist practitioners in schools*<br>• *An external online mentor*<br>• *Time to find out what we can get for free*<br>• *Other……* | *SATC twitter/ face-book*<br>*Signpost to networks*<br>*Attend a leader of leaders forum to dig deeper into the STEM landscape*<br>*Signpost to PSQM*<br>*NLE request/ deep dive science school review.*<br>*SLE nurture programme*<br>*CSci teach*<br>*SLP facilitator*<br>*PSTT link*<br>*Research breakfast club-*<br>*EEF toolkit conversations*<br>*Reflective practice school drop ins* |
| *SEF – Leadership- next steps*<br>***Intended action- in order to change what- How will you know if the action has made the desired difference?*** | | | |

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| *How can we improve?* | *Questions to encourage reflection* | *If only we had….Highlight as relevant (responding to need)* | *SATC might suggest* |
|---|---|---|---|
| *Teaching (How)* | *Do your teachers recognise the tricky bits of science knowledge and how to address these to deepen pupil understanding?*<br>*Can teachers talk about the teaching and learning approaches that they have selected and why? Are new pedagogical approaches regularly sought and trialled?*<br>*Do teachers use all the enquiry types as outlined in the NC requirements? 2013 (there are five!)*<br>*Who does most of the work in the lessons- The teacher or the pupil?*<br>*Does safety worries reduce the access to practical work?* | • *better subject knowledge including physics*<br>• *expertise help with planning skills objectives*<br>• *more child led learning and less teacher telling*<br>• *all the equipment we need for the group size we want.*<br>• *An easy check that we are managing risk appropriately*<br>• *Other…..* | *Learning community*<br>*TDTS – Teaching for understanding*<br>*Coach for TDTs*<br>*Facilitator supported SLP*<br>*Staff meetings- Enquiry types*<br>*Subject knowledge conference OGDEN*<br>*Ogden Partnerships*<br>*Co-planning visits*<br>*CLEAPSS support*<br>*Action research/ small scale practitioner research* |
| *<u>SEF – Teaching & Pedagogy- next steps</u>*<br>***Intended action- in order to change what- How will you know if the action has made the desired difference?*** | | | |

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| How can we improve? | Questions to encourage reflection | If only we had….<br>(responding to need) | SATC might suggest |
|---|---|---|---|
| Learning (The difference we make) | Do you know if your children make good progress in science?<br>Does your lesson change in response to pupil needs- stretch and challenge for all?<br>Are children encouraged to talk and think in science?<br>Do you worry about the evidence in the books?<br>Are you able to justify the statutory science assessment data as rigorous and reliable- Is it meaningful?<br>Is science in your school inclusive? Does your end of key stage data show: Gender bias? Disadvantaged pupil progress? Other bias?<br>Do your class set of books all look the same?<br>Do children get to ask questions that matter to them? | • Knowledge of current best practice for primary science assessment<br>• Formal moderation between primary schools and between primary and Secondary<br>• AfL – elicitation that informed the lesson<br>• Other….. | Explorify buddies<br>Learning community- TAPs<br>Coach TAPS<br>Co planning visits<br>Moderation materials for leaders of networks to use in networks<br>Pupil sample work from the city- available to share and discuss with secondary<br>SLP Staff meeting<br>Pupil science members on a science committee<br>Great Science Share<br>EEF report<br>Metacognition |



**SEF – Learning- next steps**

**Intended action- in order to change what? & How will you know if the action has made the desired difference?**

| *How can we improve?* | *Questions to encourage reflection* | *If only we had….*<br>*(responding to need)* | *SATC might suggest* |
|---|---|---|---|
| *Teaching (what)*<br>*Curriculum design* | *Is science responding to the new Ofsted Framework?*<br>*Do you use the term STEM? If so are you confident that STEM is developing science capital*<br>*Is science contributing to English and mathematics attainment?*<br>*How do you plan to make the curriculum memorable?*<br>*Is science taught outdoors when appropriate?*<br>*Is the National Curriculum taught as age appropriate?* | • *comparisons of curriculum maps*<br>• *Examples of STEM in practice*<br>• *Co-planning*<br>• *other* | *Connected to Kings College research.*<br>*Royal society of chemistry*<br>*Practical action*<br>*School visits*<br>*SLE visits*<br>*SLP Staff meeting science and the outdoors*<br>*ESEA*<br>*PSTT STEM trails* |



***SEF – Curriculum Design - next steps***

***Intended action-in order to change what? & How will you know if the action has made the desired difference?***

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| How can we improve? | Questions to encourage reflection | If only we had….<br>(responding to need) | SATC might suggest |
|---|---|---|---|
| Wider Opportunities | What is science? Why do scientists ask questions? Why do scientists wear white coats? Does your community have an understanding of what it means to be scientific or of the relevance of science to them?<br>Do you worry about ways to actively promote science with families- Learning challenges science to and from home?<br>What does your information, display, e-space say about the value of science to your community?<br>Do you have enough money for resources for science?<br>How many of your children have gone on to become scientists? Or currently aspire to be scientists | • low hassle science club<br>• high profile science week/ science share<br>• science role models<br>• links to industry<br>• Science beyond lessons even playtime<br>• More funding for enrichment<br>• Other…. | Lobster Facebook<br>Bid writing<br>Entrust STEM ambassadors<br>Potteries science festival<br>Space camps<br>Insights programme<br>GSS<br>Science sacks- PSTT<br>Science buskers |



*SEF – Wider opportunities & Aspirations - next steps*

*Intended action- &- How will you know if the action has made the desired difference*

## Your Feedback

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|---|
| General – The Concept<br>The rationale for this tool is that many heads do not have a science specific background nor are there many local advisors to support school self review in science.<br>Do you agree that there is a need to help headteachers or school leaders to talk about primary science ? Are you aware of similar frameworks that are readily available?<br>Please comment & signpost to alternatives as relevant |
| General- The Structure<br>There is close alignment to the language of the PSQM action plan which many subject leaders will be familiar with.<br>Are the five themes the right ones? Should it be less? Or more? |
| The Questions<br>The intention was to stimulate conversation and avoid a tick box scenario.<br>Please advise of questions that made no sense when looking at the tool with a fresh set of eyes. Did we miss any key areas of concern in schools at the moment? |
| Your outcomes<br>The desire was to move away from 'confetti syndrome'. There is a huge selection of STEM opportunities but you can not do all of them<br>Did you manage to decide what you actually needed and what would simply be nice if you had time? |
| Thank you for contributing to the shared developmental ethos<br>Would you like us to contact you to discuss further? Leave your Name / organisation & E mail |