**Intent, Implementation and Impact**

**Science Intent**

At Thurgoland our aim is to encourage explorative learning of science through investigative practical work, planned and carried out by the children, promoting love for learning and ultimately broadening their science capital. Subject knowledge is taught also discreetly but is deepened and applied through investigations, aiming high to achieve more from their learning. This approach allows children to ask questions, analyse and understand scientific content and answer questions taking on ownership for their learning, giving each part of the lesson ‘a go’. A growth mind-set and resilience is promoted in our children; when experiments ‘go wrong’, we use this as a positive process to discuss reasons for this, in order to take our learning forward in the next investigation.

As a Church of England School, every aspect of the school’s work is underpinned by Christian values. Science is seen as a key subject in providing opportunities for awe and wonder, thus promoting spiritual growth. It can also provide a means of exploring faith and values where respect can be developed. Wherever possible, we link our R.E. curriculum to other subjects.

**At Thurgoland we intend to:**

From EYFS to Year 6, we intent to develop children’s learning in science by exposing them to ambitious, unit specific vocabulary, ask questions to deepen their understanding, articulate their ideas and thoughts and finally, solve problems by combining their knowledge and skills within investigations.

We aim to develop children’s scientific skills needed to:

1. Plan, collect, discuss and analyse scientific investigations we carry out
2. Be increasingly proficient in scientific enquiry; to ask questions and record information in an organised way
3. Interpret data, asking questions to understand subject knowledge learnt – asking how or why
4. Communicate scientific subject knowledge in a variety of ways, including through pictures, videos, numerical and quantitative data and hands on practical work

**Scientific implementation**

* **Long term:** Collaborative planning ensures that pupils cover all the objectives set within the National Curriculum / Development Matters and that skills progress from year group to year group
* **Medium term:** Staff follow the Science knowledge and skills progression document for their year group.
* **Short Term:** Investigation proforma has been created to allow children to apply and deepen their understanding of knowledge learnt through an investigative approach and key questioning
* Vocabulary mats stuck in books at the start of a new science unit. Allows the children to access, use and fully understand vocabulary involved in each unit. Incorrect spellings of these words and key spellings year group specific are identified by teacher when marking expected for children to respond in purple pen.
* Teachers provide interactive well composed lessons that allow children to explore their learning and understanding, to asked questions and independently carry out investigations
* Activities are planned bearing in mind the range of ability within a class: less able children are supported by scaffolding with vocabulary banks, differentiated challenges and adult led questioning to ensure that ALL groups of learners can access the curriculum.
* The carefully crafted questions in each lesson allow more able children to inquire more deeply.
* Children are assessed at the end of each scientific unit using Science Focus assessment criteria and teacher assessment inputted onto Insights Tracker.
* Where appropriate, staff plan for cross curricular opportunities.

**Impact**

* Learning walks scheduled for Autumn 2 to look at the impact of the new progression document with a focus on how disadvantaged groups are supported to access this curriculum
* Monitoring use of vocabulary
* Subject knowledge and skills are consolidated throughout the unit by the children completing investigations based learning and key questions an exit piece at the end of each topic. This is being monitored this academic year and we have scheduled in subject moderation to moderate a cross section of children’s work.
* From this, we aim to build a bank of standardised exemplification materials with will aid teacher’s judgements in coming terms / years however to make this year’s judgments, explemars from online from The Government 2018 teacher assessment exemplification: science (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/763065/2018\_key\_stage\_2\_teacher\_assessment\_exemplification\_science.pdf).
* Teachers plan and assess from the skills progression document, which has specific skill and knowledge threads that are built upon year by year from EYFS to Y6. This is also being reviewed led by Science Lead through team planning and teaching to ensure consistency and progression.