A Journey into D.T. …..

Intent

The national Curriculum for DT:

> 'Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.'
>
> National Curriculum 2013

Our Inquiry based, child-led topics, allow for context relevant learning, giving purposeful meaning and real-life relevance to learning in Design Technology. Our aim is to make the interconnectedness of our world explicit, to build a web of understanding about design, invention and human creativity, which encourages learner curiosity, questioning and reflection.

We aim to create free thinking and promote a questioning approach to our man-made world through DT, encouraging children to pose their own questions and problem-solving strategies. Purposeful questions promote critical thought and deeper engagement with the concepts being learnt, skills being applied and independence in working, at a much more personal level. All learners are able to access DT learning at a level and in a way that is appropriate for them, and highlights no sense of difference to others in the class, as all may be following similar yet different inquiries. Indeed, children with academic learning difficulties may find DT allows them to 'shine'. Problem based learning within an Inquiry approach promotes 'ownership' of the learning process, which is empowering for our young designers.

The whole school ethos of learning which is based on 'Building Learning power' and 'Growth Mindset' thinking, has given permission to children to have a go, make mistakes and try again. There may be no right or wrong answer, but the process is where the learning is.

DT is an exciting area of learning that links to all other areas, when a problem solving, critical and creative approach is taken. The multi-disciplinary approach engendered by Inquiry, draws on

integrating different areas of learning that cross the boundaries of individual disciplines to enhance the scope and depth of learning. It can excite, inspire, and raise aspiration in our children of the possibilities open to them, and that their ideas can have an impact on others and their world.

Implementation

Throughout the school, practical skills are explicitly taught and modelled. Use of equipment and tools are taught, along with safe use. Skills develop sequentially and cumulatively to give the learners a firm foundation for learning and life beyond school.

Design content is interwoven with termly topics which ensures children will encounter the concepts in a multi-disciplinary way, and learning will be more relevant and part of a richer foundation of knowledge and skills, than would otherwise be the case. In this way, children are encouraged to think critically, ask questions and interrogate processes and outcomes. This also permits different ways of viewing, which has been promoted by Reggio Emelia ideas that our schools have focused on. Our Inquiry based learning allows learners to integrate new knowledge into larger concepts over time, so the foundation of their learning is strong and adaptable.

Hands on and practical learning is a key-stone of classroom practice, as is collaborative working. Use of ICT for modelling, provocations and stimuli, problem based, experiential learning, enrichment, trips and visits, and use of the local environment enhance our engagement with Design Technology. The impact of this kind of learning embeds more readily, and children often talk about design projects, competitions and challenges from years before, which shows the impact achieved by this approach to learning.

Children's skill base, application and thinking, are assessed to identify areas of strength and weakness. Support is offered through comments in books, conversations during learning time and questioning that allows scaffolded thought, learning and progression. Peer and group collaboration supports skill development.

Children's learning objectives are set out in a jigsaw, alongside other areas of learning and enable them to see the links between, and decide upon how they are going to plan their learning and inquiry routes.

Children with additional needs are encouraged to explore their ideas with support, and presentation of their learning, as with all children, may not be written. Whilst written recording is important, it is also important that this does not hamper them in their engagement or enjoyment or prevent them showing and sharing the design process or questions they have followed. Design Technology allows for learning and understanding in a way that is meaningful to each child, whilst adding to the class' collective learning ideas, concepts and connections, processes and questions.

DT at Boskenwyn and Germoe may look different in each class, but the common characteristics will be hands-on exploration, discussion, questioning, problem posing and solving, research, collaborative working, debate, sharing skills and presentation, trial and error, modelling and explanation, linking to previous learning, to different areas of experience and to the findings of others in the class. And of course, practical and proactive engagement in making. Our DT is

experiential, and from the play-based discovery learning and schemas in Early years through to the more structured critical approach in Y6, the characteristics of good learning remain the same.

Impact

Children enjoy DT

Develops social skills through collaborative sharing and working

DT skills are demonstrated and discussed in presentation of work

Evidence of DT skills in use across other areas of learning

Encourages problem solving

Supports individual creativity and artistic flare

A practical area of learning that allows those with academic barriers to 'shine' and grow in confidence

Ensures development of awareness of safety, appropriate use of tools and equipment relating to life skills

Good engagement with ideas, process and outcomes

Pupil Voice

Some comments made by our children:

'Very fun. I really liked the video about the popcorn machine – it helped me think about my own design' (Y6)

'I like designing stuff' (Y5)

'DT is good, I like it because children are able to design' (Y6)

'I really like it because you can be really creative – even though you have instructions, you can go off and make what you want.' (Y6)

'I made a design using electricity – that speaks or spins. I made a face – it's eyes lit up.' (Y3)

An Example Progression of Skills

	EYFS	By the End of Y2	By the End of Y4	By the End of Y6
Design	**Manipulates materials to achieve a planned effect. Constructs with a purpose in**	**To design purposeful, functional and appealing products for themselves (Y1) and others (Y2)**	**To use research to design products that are fit for a purpose, aimed at particular individuals or groups**	**To use the research and develop design criteria to inform the design, of innovative, functional,**

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	mind, using a variety of resources.	**based on design criteria** **To generate, develop and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology**	**To generate, develop, and communicate their ideas through discussion, annotated sketches and information and communication technology**	**appealing products that are fit for purpose, aimed at particular individuals or groups** **To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer aided-design**

Examples of Learning Outcomes

Our FAMILY Values

Our family values are embedded in our DT learning. Here are just a few of the ways:

Fair trade relating to integrity of design ethos and purpose

Building resilience through the design process, modification and collaboration

Links to healthy living, cookery and other problem solving in life and the world

Increasing awareness of safety, using tools

Collaborative working between our two school and with other schools

International citizenship through DT projects with an Erasumus project with Greece, Turkey and Romania which included teacher and pupil mobility

Thinking about and designing entrepreneurial 'small businesses' with links to maths and economic development – Y5/6 money challenge, children's Christmas stalls

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Cultural Capital

Topic-based Design Technology gives opportunity to develop children's cultural awareness and understanding. It allows experience to be gained of the interconnectedness of people, places, ideas, innovation, application and adaptation in design processes and outcomes.

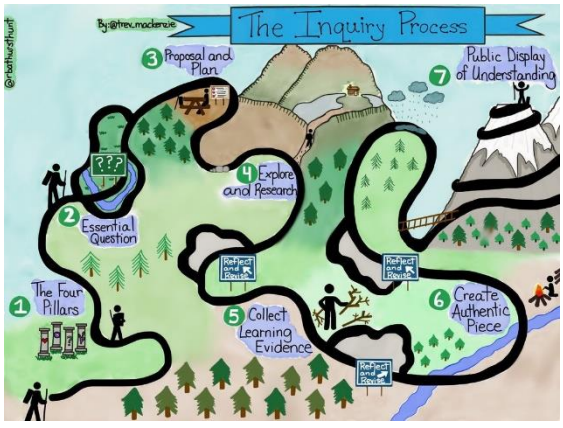
Erasums projects have created European links with a project on masks, promoting collaborative working between the children of four countries, bringing added value through development of awareness of different cultures in Europe, language, foods, learning and lifestyles and social interaction with other children of a similar age.

Incidental DT projects links to events such as Maisy Day or the Helston Lantern parade and other community and Cornwall based celebrations and cultural events for example.

Our Multi-Disciplinary Approach

The Federation of Boskenwy and Germoe Schools believe in supporting children to become independent learners, who are driven by their own sense of wonder and inquisitiveness. To this end, we promote an Inquiry led, topic-based approach. This encourages child-led learning, whilst supporting and scaffolding progressive skill development.

Inquiry based learning makes links between concepts and ideas, skills and application, across many areas of learning. It promotes a creative and broad foundation which children are more readily able to use and apply, adapt and develop.



Much DT learning is couched within a problem or need, and the Design process sits neatly with the journey children take in Inquiry learning. As with all inquiry based learning, questioning at a deep level, encourages interrogation of process and concepts and children become thinkers, invested in their own learning. DT within our Inquiry ethos promotes independent and reflective learners, who can assimilate different skills, concepts and understanding to take their learning further, using their own curiosity and creativity.

https://thinkingpathwayz.weebly.com/inquiry-based-learning.html

Last Year's Successes

Involvement with STEM and STEAM projects eg Erasumus trip to Europe and Car challenge

Involvement of parents and Governors in some of the DT projects – particularly the STEM

Embedding of DT into Inquiry based projects

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Hands-on practical work from EYFS with hammers and saws to make bird boxes to Y6 car construction

Trips and visits supporting learning and understanding in DT, but through a multi-disciplinary lens eg visit to Helston Museum, telegraph museum as part of our Technology project for eg

Children applying learning and skills, and showing these through presentations, models, plans and products

Children designing and making at home – from cardboard robots in EYFS to cookery, costumes and models from the older children.

After school clubs that have supported elements of DT

Priorities for this Year

Monitor DT outcomes to ensure learning is captured in a variety of ways – made outcomes, models, photographs, formal written plan, diagrams, evaluations, investigations, mock-ups, see-saw documentation, cartoon concepts, presentations, floor books, displays etc

Embed STEM and STEAM via outside opportunities, and through multi-disciplinary topic-based approach

Ensure provocation and problem based engagement through learning

Careful selection of provocations and resourcing so children are enabled and supported to think widely and creatively

Application for the STEM week in March