EMA subject review – Design and Technology KS1 & KS2

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| Key stage 1 Aims | Implications for BAME and EAL learners |
| * develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
* build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
* critique, evaluate and test their ideas and products and the work of others
* understand and apply the principles of nutrition and learn how to cook
 | * Diversity is reflected in the teaching of Design and Technology and the exemplification of ideas and events. Pupils from culturally diverse backgrounds feel included throughout the learning.
* Learning is accessible and engaging for BAME and EAL learners:
* First language learning and consolidation is encouraged
* Technical language is explicitly taught and modelled
* Design and Technology can be studied in familiar cultural contexts
* Groupings are flexible depending on task. Language based activities, such as critique and evaluation, have EAL learners grouped with strong English language exponents.
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| Key stage 1 Subject content  | Implications for BAME and EAL learners |
| When designing and making, pupils should be taught to: **Design** * design purposeful, functional, appealing products for themselves and other users based on design criteria
* generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

**Make** * select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
* select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

**Evaluate*** explore and evaluate a range of existing products
* evaluate their ideas and products against design criteria

**Technical knowledge** * build structures, exploring how they can be made stronger, stiffer and more stable

 explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products **Cooking and nutrition** * use the basic principles of a healthy and varied diet to prepare dishes
* understand where food comes from.
 | * The diversity of the local community considered when planning content
* CPD is planned which supports teachers to develop cultural knowledge and EAL teaching skills
* The language of evaluation may be unfamiliar to EAL learners or learners more familiar with fact-based systems: evaluative talk should be developed and consolidated (modelled and re-visited).
* Groupings are flexible depending on task. Language based activities, such as evaluation, have EAL learners grouped with strong English language exponents.
* The local community is reflected and involved in food related learning.
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| Key stage 2 Aims | Implications for BAME and EAL learners |
| * develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
* build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
* critique, evaluate and test their ideas and products and the work of others
* understand and apply the principles of nutrition and learn how to cook
 | * The perception of identity is thoughtfully addressed through the curriculum, particularly relating to the notion of food “norms”.
* Pre-teaching of vocabulary and processes to reduce the language burden on EAL learners.
* Pupils have the option to develop their ideas in their language of choice before sharing
* Groupings are flexible depending on task. Language based activities, such as evaluation and critique, have EAL learners grouped with strong English language exponents.
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| Key stage 2 Subject content | Implications for BAME and EAL learners |
| **Design** Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups * generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

**Make** * select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
* select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

**Evaluate** * investigate and analyse a range of existing products
* evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
* understand how key events and individuals in design and technology have helped shape the world

**Technical knowledge** * apply their understanding of how to strengthen, stiffen and reinforce more complex structures
* understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
* understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
* apply their understanding of computing to program, monitor and control their products.

**Cooking and nutrition** * understand and apply the principles of a healthy and varied diet
* prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
* understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.
 | * Pupils learn a great deal of new vocabulary in KS2 Design and Technology which may present a barrier to EAL learner progress: important vocabulary should be identified and consolidated (modelled and re-visited) as should the phrasing of hypothesizing and evaluative language.
* Examples of products from different cultures are explored, demonstrating the range of approaches to problem-solving in different contexts and cultures.
* In the design and making process, draw on food and techniques from a range of cuisines (including those of pupils represented in the school)
* Emphasise the global links in food processing
* Develop Links with diverse community businesses

 * Use pictorial DT dictionary (e.g. [www.data.org.uk](http://www.data.org.uk)) to support EAL learners
* Explicit modelling and demonstrating of language to support EAL learners, both beginner and advanced.
* Speaking and listening opportunities are identified and planned for to help EAL learners to develop their confidence and fluency in their use of English, thinking and problem-solving skills.
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Questions to support self-evaluation of inclusion in the Design and Technology curriculum

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| **How inclusive is the Design and Technology curriculum?** |
| Is the curriculum giving pupils the essential knowledge and skills they need?(next stage/destinations)* Do EAL learners have the language tools and vocabulary to access the curriculum?
* Do BAME pupils understand that there are no limits to their aspirations?
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| Do pupils know and remember more?* How does knowledge and recollection compare to non-EAL peers?
* Does the knowledge demonstrated by pupils indicate a view that embraces diversity?
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| Is the curriculum cumulative?(step by step in learning more knowledge)* Are there any gaps in learning for EAL/BAME pupils?
* Do pupils see themselves represented in makers and designers studied, and contexts explored?
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| How well does the subject curriculum fit in with other subjects?* Are links made to other subjects?
* Are links made to BAME mathematicians, scientists, sportsman, artists and musicians?
* Are there opportunities for pupils to study in their first/other language?
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Examples of resources that reflect the diversity of the local community and figures in art and design:

* Paul R. Williams -1940’s Public housing designs (Los Angeles, America) – architect.
* Norma Merrick Sklarek – parents from Trinidad and Tobago, first African American to graduate as an architect.
* Design Council: <https://www.designcouncil.org.uk/black-creatives>
* Architecture.com. <https://www.architecture.com/about/equality-diversity-and-inclusion/celebrating-bame-award-winners>

**Local resources**

* MK Creative and Cultural Strategy 2018 -2027 – List of events and organisations listed in the report: <https://www.milton-keynes.gov.uk/leisure-tourism-and-culture/leisure-and-community-activity-hub/culture/arts-organisations>
* MK Gallery: info@mkgallery.org
* MK Arts and Heritage Alliance – AHA-MK (MK Cultural Education Partnership): <http://aha-mk.org/>

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* MK Arts and Heritage Alliance – AHA-MK (MK Cultural Education Partnership): <http://aha-mk.org/>

**Websites**

* Design and Technology Association: <https://www.data.org.uk>
* STEM – resources to support DT teaching: <https://www.stem.org.uk/stem-clubs/workshops>
* Design Council: <https://www.designcouncil.org.uk/>
* Biography.com: <https://www.biography.com/people/groups/black-inventors>

**General Resources:**

BAME education <https://libguides.ioe.ac.uk/BAMEresources>

National Archive – BAME histories <https://www.nationalarchives.gov.uk/education/resources/black-asian-and-minority-ethnic-histories/>

Diversity texts: <https://www.letterboxlibrary.com/> - diversity texts with clpe <https://clpe.org.uk/> CLPE reflecting realities research: <https://clpe.org.uk/RR>

<https://www.theguardian.com/childrens-books-site/2014/oct/13/50-best-culturally-diverse-childrens-books>

Links to EMA Network Diversity and Inclusion seminar – July 2021:

\* Hannah Wilson – [Vision and values: embedding diversity, equity and inclusion in your school](https://www.youtube.com/watch?v=6iMXQ_zVSTI)

\* Bennie Kara –[Diversifying your curriculum](https://www.youtube.com/watch?v=mg5MquP6-PA)

\* Pauline Lyseight-jones and Liz Agbettoh - [Honest conversations on race and the importance of language](https://www.youtube.com/watch?v=vWv3xwpB-MU)

\* Shammi Rahman - [Addressing difficult conversations](https://www.youtube.com/watch?v=J5OZRgN8SQk)

\* Serdar Ferit – [Lyfta and immersive human stories](https://www.youtube.com/watch?v=J5OZRgN8SQk) (Need to scroll through to reach Lyfta presentation)

Above with Urls:

Hannah Wilson <https://www.youtube.com/watch?v=6iMXQ_zVSTI>

Bennie Kara <https://www.youtube.com/watch?v=mg5MquP6-PA>

Pauline Lyseight-jones <https://www.youtube.com/watch?v=vWv3xwpB-MU>

Shammi Rahman – Difficult converations – first part, Lyfta – Moving Stories – second part: <https://www.youtube.com/watch?v=vWv3xwpB-MU> (Also includes EMA Network resources and MAKE presentation)