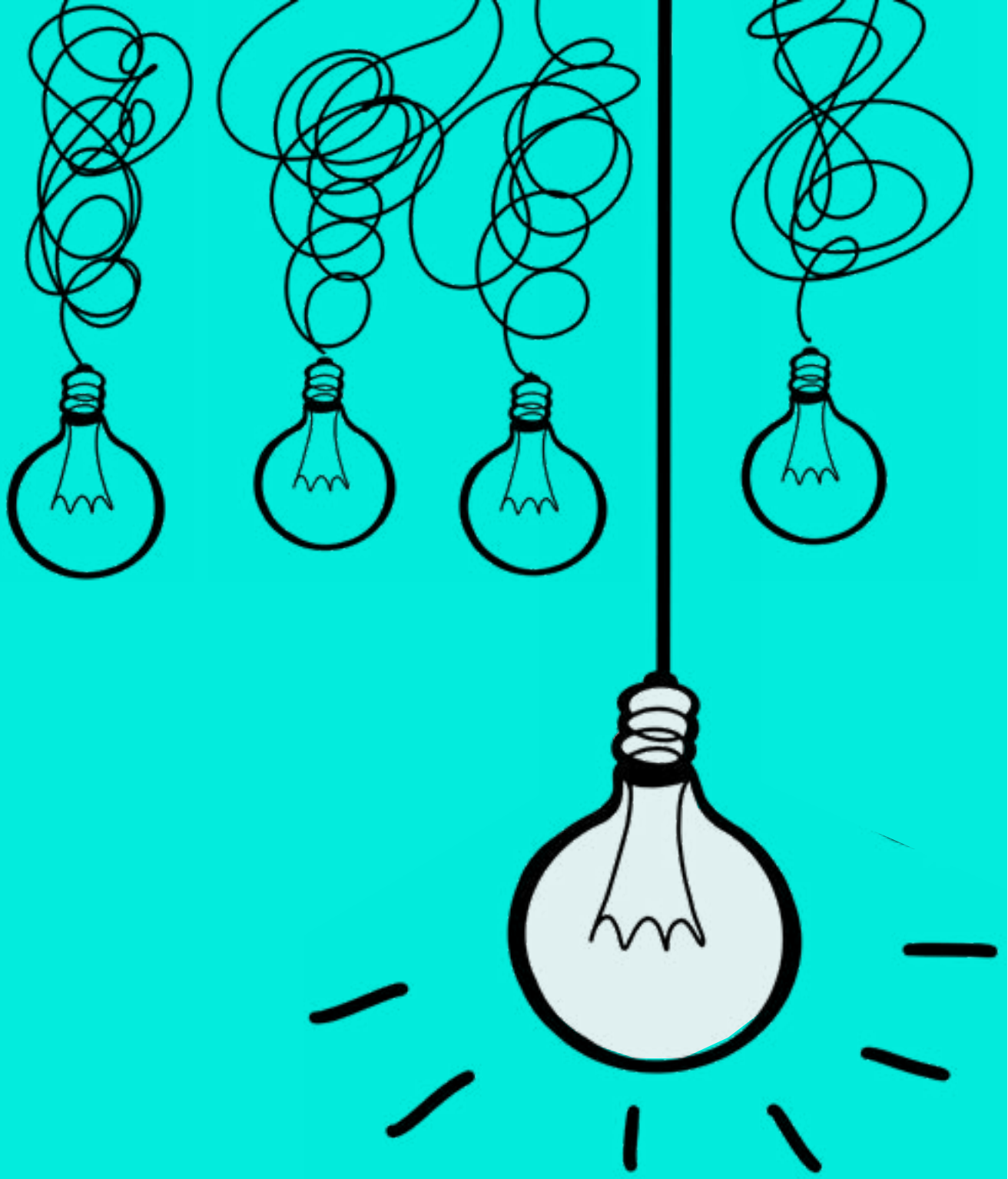
RSA



RSA Pupil Design Awards

BRIEF PACK 2020-21

"That combination of thought and action defines creative confidence: the ability to come up with new ideas and the courage to try them out."

Tom Kelley, Creative Confidence

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Introduction

The RSA (Royal Society for the encouragement of Arts, Manufactures and Commerce) believes in a world where everyone is able to participate in creating a better future. Through our ideas, research and a 30,000 strong Fellowship we are a global community of proactive problem solvers. Uniting people and ideas to resolve the challenges of our time.

Through the RSA Pupil Design Awards, we invite you to join our community of changemakers. We are calling on you to demonstrate how design has the potential to unravel complex problems, explore new possibilities and unlock new ways to meet the needs of people and our planet.

Our 2020/21 briefs pose tough challenges and they open up a range of possibilities to present creative designs. How might we tackle the digital divide so that all pupils can access high-quality online learning? How might we redesign how and where we learn for greater harmony between people and our planet, using lessons from biomimicry ? How might we challenge systemic racism by redefining what heritage means for future generations?

We know that amongst you there is an abundance of talent, appetite and determination to address the challenges of today and paint tomorrow with hope. Now in its seventh year, the Pupil Design Awards has been a catalyst for great ideas, innovative products, and pioneering designs. We can't wait to see what's in store this year!

The RSA Pupil Design Awards

The RSA Pupil Design Awards is a free, national design competition for secondary school and sixth-form pupils aged 11-17.

Pupils are encouraged to use their creativity and imagination to tackle real challenges facing people and the planet.

Schools are provided with lesson plans, training, and mentors to support participation. Teams or individuals submit design proposals and material explaining how they approached their problem.

Finalists present their ideas to industry expert judges in three year group categories (Years 7 & 8, Years 9 & 10 and Year 12).

Advocating for design

Through the Pupil Design Awards, we advocate for the role of design and innovation in education to bring about positive social change. We aim to:

- broaden definitions of how design can be applied
- introduce social design and design thinking to teachers and pupils
- build creative confidence in young people

The 2020/21 RSA Pupil Design Awards are brought to you by The Comino Foundation and the RSA.

With additional support from Fixperts.

Timeline

September

Pupil Design Awards launch

November

Teacher workshops

February-March

Mentor visits

April

Submissions open

May

Submissions close

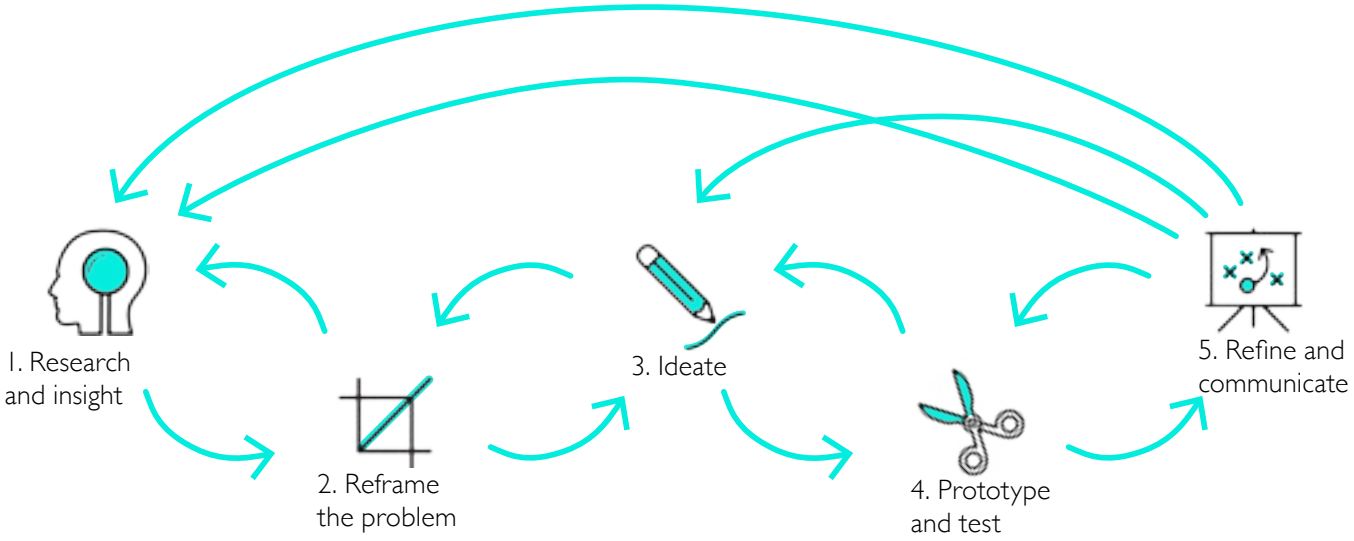
June-July

Judging sessions & awards ceremony

What is Design Thinking?

Design thinking is a process and a mindset used to tackle complex problems. It can help us explore new alternatives and to imagine and bring to life ideas that didn't exist before. It offers us an opportunity to design with communities, to deeply understand the people we're looking to support, to be creative, and to come up with new answers that respond to people's needs and motivations. It is a flexible and non-linear process, where you can go back and forth as many times as you need to reach an idea that addresses the problem you have identified.

The non-linear design thinking process



What is a design brief?

A design brief is set at the start of a project to give guidance and focus, whilst leaving room for open ended, creative responses. A good brief helps frame the challenge you are being asked to explore and provides detail on important considerations and key information.

Once you have your design brief, you can then apply your design thinking and start on your design journey. Make sure that throughout your design journey you constantly refer back to your design brief to ensure your proposal is responding to the challenge you have been set.

"The designer's mindset embraces empathy, optimism, iteration, creativity, and ambiguity. And most critically, design thinking keeps people at the center of every process."

IDEO, Design Thinking

What is a design proposal?

A design proposal comes at the end of a project once you have completed your design journey, to summarise your idea and communicate it to others. Make sure your proposal responds to each area of the submission criteria.

Stories are one of the most powerful ways to communicate your proposal and your experience of the design journey. Think about how to get your audience interested in your idea and craft a short, engaging narrative focusing on the most important aspects of your proposal. For example: name the brief you've explored, describe what inspired your idea, your key findings from your research, how it responds to the needs you learnt about and explain how you have tested and developed your proposal further.

A good design proposal communicates the value of your idea and explains how it makes a positive difference to the natural world or people involved. Make sure you build your proposal to motivate others and bring your idea to life.

How to approach the briefs applying a design thinking process:

1.

Research and understand people's needs and motivations:

Undertake open research to help understand the needs and motivations of the people affected by the problem posed in the brief. This could be done in different ways, such as through interviews, conversations, observation and stories. Make sure you capture your findings (what does the research say?) and insights (what did you learn? This can include patterns or behaviours that might lead to ideas).

2.

Reframe the problem:

Choose a specific problem within the brief that you would like to solve and consider your audience. Who is currently affected by this problem? They will be your partners in this process. When applying design thinking, we focus on people as the source of inspiration and direction for our ideas.

3.

Ideate:

Let your imagination flow and explore lots of ideas that address the problem in the brief (don't be afraid of including silly ideas!) Once you have come up with as many ideas as you can, you might want to focus on one or two that seem interesting and original.

4.

Prototype and test:

Experiment and develop your idea further and try to make it visual and tangible. For example, make a drawing that explains a process or create a product out of cardboard. Share your proposal with your audience and gather lots of feedback. Make lots of changes to your idea based on that feedback. Your audience will help you to improve your proposal and make it even better.

5.

Refine and communicate:

Once you have modified your proposal, refine how to present it. In particular, consider the way you are going to commmunicate and think about following this structure: what, how, for whom, and why. How will your idea work in the real world? For example: R.O.B. (Robot of Business), is an interactive system that teaches pupils valuable skills such as how to write CVs and prepare for job interviews.

Design thinkers are...

unlike other problem solvers

not knowing the answer to the challenge at hand.

and we spend a surprising amount of time

we tinker and test, we fail early and often

And yet, we forge ahead.

We're

optimists & makers,

experimenters & learners

We

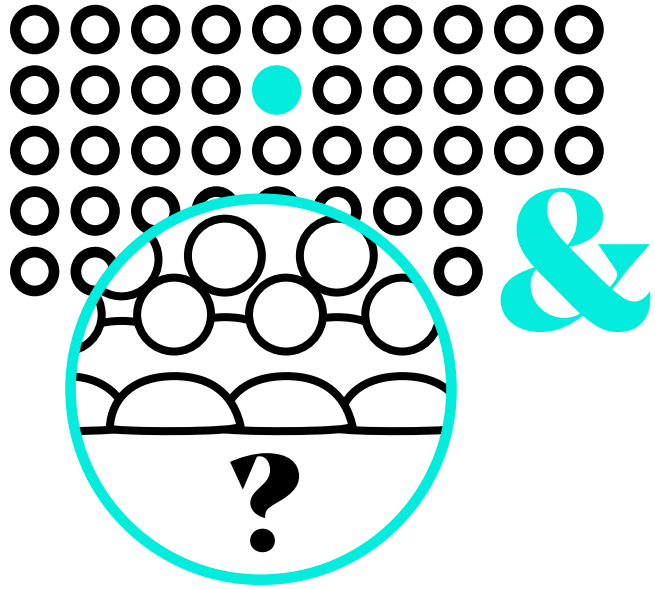
empathize

&

iterate,

we look for inspiration in unexpected places

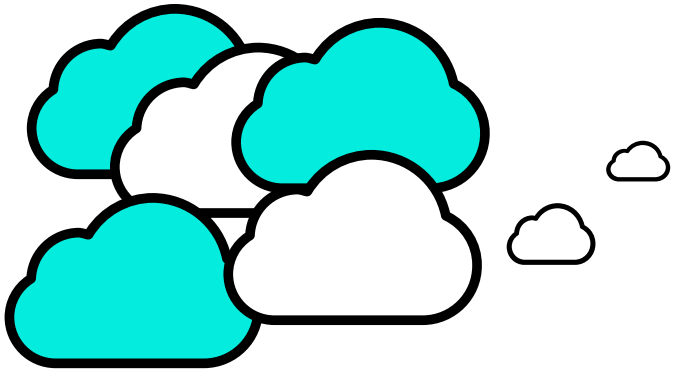
We believe that



a solution is out there

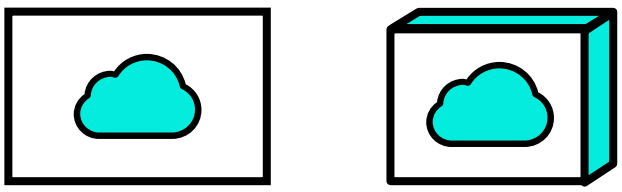
that by keeping focused on the people we're designing for and asking the right questions,

we'll get there together.



We dream up lots of ideas,

some that work and some that don't.



We make our ideas tangible

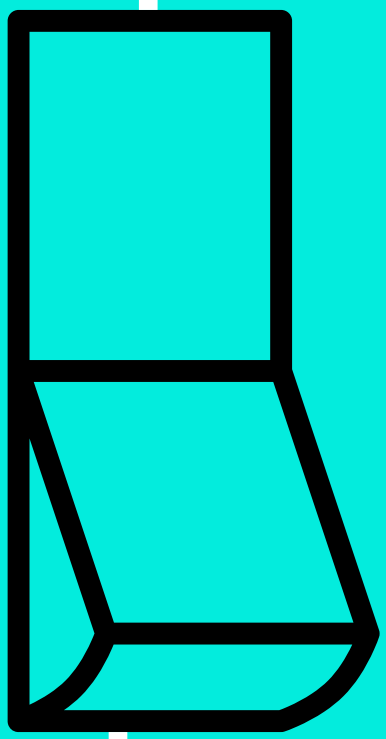
so that we can test them,
and then we refine them.

In the end, our approach amounts to

wild creativity,
a ceaseless push to innovate
& a confidence that leads us to solutions we'd never dreamed of when we started.

IDEO.org [2015], The Field Guide to Human-Centered Design, pg. 10

SWITCHED ON



BRIEF 1

Brief 1:
Switched On

How might we ensure that all young people have good access to high-quality education as online learning becomes more important?

Background

- Participating fully in society today requires us to be able to access technology and the internet. The COVID-19 pandemic has caused massive disruption to schools and colleges, with pupils across the world switching to learning from home.
- This has exposed a pre-existing **digital divide,** where young people don't all have the same access to the internet and to equipment like laptops, tablets and phones:
  - **10% of households have no access to the internet and 11.3 million people in the UK lack digital skills (Carnegie Trust, 2019)**
  - **700,000 young people did not have the digital skills or devices they needed for homework even before school closures (Lloyds Bank, 2019)**
  - **93 percent of schools from the most deprived areas have some pupils with limited access to IT compared with 73 percent of those from the least deprived areas (NFER, 2020)**
  - **During school closures independent school pupils were twice as likely as state school pupils to take part in virtual lessons every day (Sutton Trust, 2020)**
  - **36% of teachers said they did not have the IT equipment or digital skills needed for distance teaching (NASUWT Teachers' Union, 2020)**

What needs to change?

- Even as most pupils return to school, we believe that access to online learning remains important to ensure that all young people can fully participate in learning opportunities and succeed in their education.
- COVID-19 has also given us an opportunity to think again about how technology can improve learning. In order to make sure everyone can benefit from these improvements, particularly the most disadvantaged young people, we must find innovative ways to tackle the digital divide.

How to approach the brief

When tackling this brief, you might want to focus on:

- Physical resources: how can we improve access to technologies such as laptops, tablets and phones?
- Joined-up services: can schools collaborate with other local institutions such as libraries or local employers to improve access to technology and additional expertise?
- Enriching experiences: outside of formal lessons, what sort of other opportunities might young people without digital access miss out on? E.g. online musical instrument tuition or virtual work experience
- Learning at home: can parents and carers get more help to support young people with online learning at home? How might somebody's home environment affect their ability to use technology?
- How can technology and digital learning support the needs of all learners, including those with special educational needs and disabilities?
- How can digital technology support young people's social and emotional needs by helping to maintain relationships with teachers and peers?
- How can technology be combined with non-digital activities in a way that ensures pupil engagement and develops a wider range of skills?

Here are some examples of proposals that could meet this design brief:

- A cost-effective and accessible device that enables pupils to project mobile phone screens on to flat surfaces, to allow better participation in online learning.
- A service where older pupils volunteer as online tutors for younger pupils attending a school that is unable to offer daily virtual lessons
- A campaign for members of the public to donate unused IT equipment to pupils in need

Further Resources

- Sutton Trust Covid-19 Impacts: School Shutdown Briefing
- OpenIDEO COVID-19 Reimagine Learning Challenge Responses
- Camden Council launches scheme to help vulnerable students access online learning
- Digital divide: Six children sharing one phone for homework

LESSONS FROM NATURE

BRIEF 2

Brief 2:
Lessons from Nature

How might we learn from the natural world to reimagine learning environments that better respond to the needs of both people and the planet?

Background

- The design of our built environment - the towns, streets and buildings where we live and learn - has an effect on the planet and future generations. Poor planning and a lack of consideration for materials, space, light and energy are contributing to the climate crisis and damaging our **natural ecosystems** and our own wellbeing.
- How can we ensure young people spend their school years in environments that enhance their wellbeing and learning whilst also responding to the needs of our planet? The natural world itself might offer solutions in the shape of bio-inspired designs.
- **Biomimicry** involves looking to the natural world for inspiration to solve design problems. By mimicking the shapes, materials and structures found in nature we can develop new products, materials and architecture to solve human design challenges.
- Biomimicry goes beyond simply creating things that look like something in nature. Instead it looks to nature for clues on how our designs can contribute to a healthier planet. Biomimicry inspires us to move away from a linear, 'take-make-waste' model of design. How might we learn from nature's **circular** processes to design in ways that reduce or eliminate waste and pollution, keep products and materials in use, and regenerate natural systems?
- There are lots of inspirational examples of designers learning from nature:
  - **The Gherkin (London) takes its sustainable solution for ventilation from the structure of the Venus basket flower for air to flow more smoothly compared to traditional office towers.**
  - **Sunflowers have inspired new 'thermobiometals' that can track and respond to the sun to enhance clean solar energy.**
  - **The 'honeycomb' inspired cladding of The Hive Public Library (Worcester) helps insulate the building and uses sustainable copper alloy – the building was designed by an RSA Royal Designer for Industry (RDI), Peter Clegg.**

What needs to change?

- The **climate crisis** is putting stress on our planet, and many people are losing hope in finding solutions to the challenges faced by our **natural ecosystems.** Young people in particular have demonstrated how concerned they are about the human impact on the environment and their future.
- The design of the spaces where we learn represents a challenge. They often make poor use of space and light, use energy in an inefficient way, and encourage the use of unsustainable materials such as plastics.
- Using biomimicry, how could improving elements of our learning environments and developing more sustainable resources make our schools, colleges or nurseries more impactful by improving pupils' and teachers' engagement and wellbeing, while also supporting the natural world.

How to approach the brief

When tackling this brief, you might want to focus on:

- The design of areas such as classrooms or communal spaces:
  - How can elements such as space, light and acoustics be improved through biomimicry to support learning?
  - How can we improve the design of individual objects or items of furniture to support pupils to gather, interact and build relationships?
- The connection of schools to their immediate environment:
  - How might outside spaces be used to support learning or other outcomes?
  - What elements of climate change are schools vulnerable to e.g. flooding and how can biomimicry help us find solutions?
- The sustainability of materials and resources within schools
  - Taking inspiration from nature, what alternatives to concrete, plastics and other environmentally harmful materials could be used?
  - How might we enhance schools' clean energy usage from the designs found in nature?
  - Think about how to adapt elements of existing buildings rather than redesigning from scratch. Be mindful of how much building and construction contributes to carbon emissions.

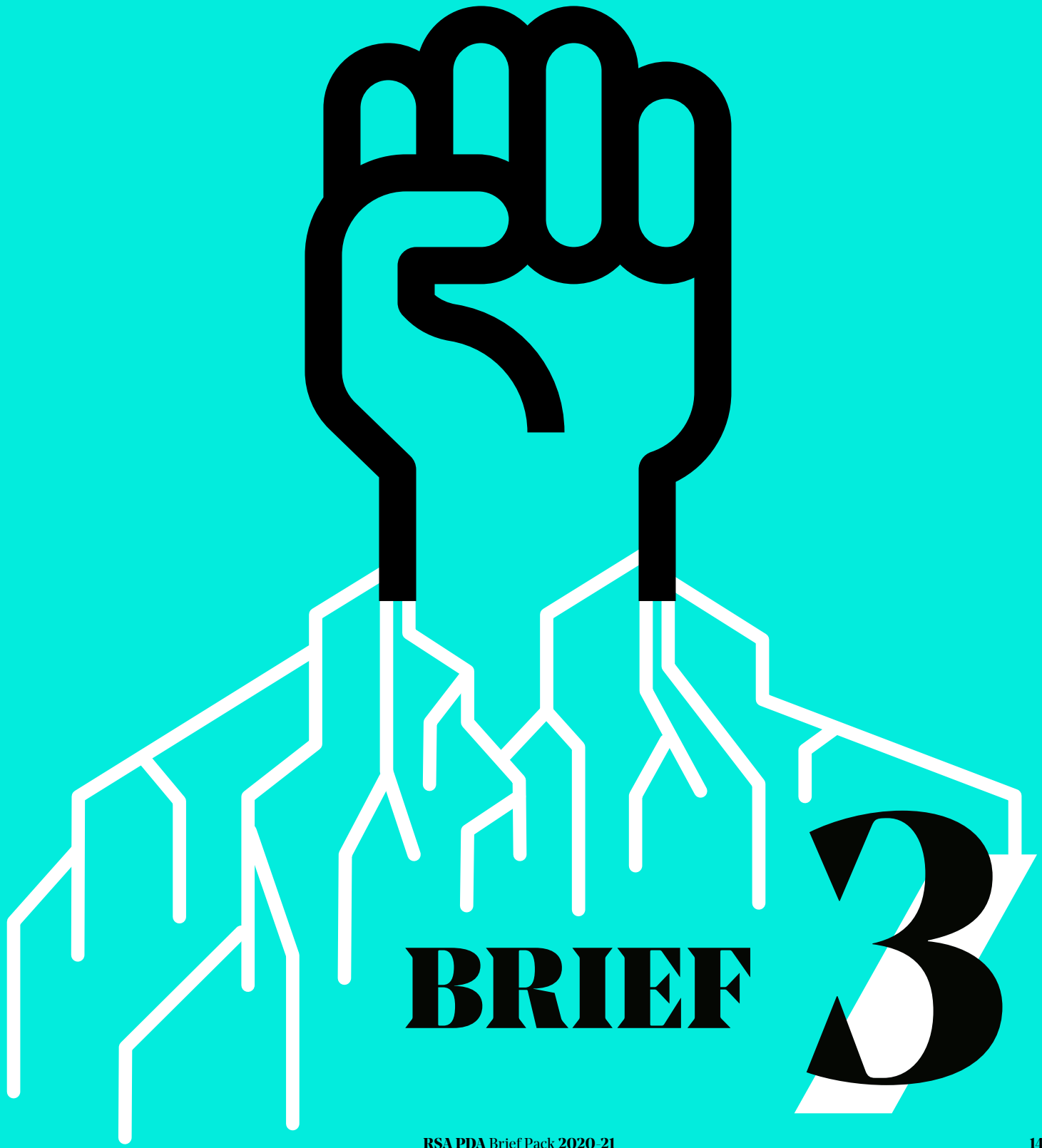
Here are some examples of proposals that could meet this design brief:

- A classroom clock inspired by the way trees record time to inspire students to think and act long term
- Windows that mimic the lotus plants' self-cleaning surface to cut down on water waste and improve classroom lighting
- An outside learning space inspired by the circular construction of birds' nests that fosters inclusive interaction

Further Resources

- Biomimicry Institute Toolbox
- AskNature: a comprehensive catalogue of nature's solutions to human design challenges
- Ellen MacArthur Foundation biomimicry lesson resources
- 'The world is poorly designed but copying nature helps' video (6 mins)
- Janine Benyus TED Talk 2009 'Biomimicry in action' video (17mins)
- Laggerberg School (Sweden) uses biomimicry to solve poor ventilation
- Better Space for Learning Report

ROOTS TO EMPOWERMENT



BRIEF 3

Brief 3:
Roots to Empowerment

How might we challenge systemic racism by redefining heritage to ensure that future generations engage with a more inclusive story of our past?

Background

- Summer 2020 saw the resurgence of the Black Lives Matter movement and a global response to the killing of George Floyd in Minneapolis. This has been widely hailed as a defining moment in our collective responsibility to challenge systemic racism.
- **Systemic or institutional racism** refers to the ways that prejudice and discrimination are embedded into the everyday actions and decisions of institutions. Global protests have also highlighted the historic roots of racial injustice and how traditional accounts of the past can reinforce inequality. This is particularly true of **heritage.**
- What is **heritage?** Heritage refers to features of the past that we value and want to pass onto future generations. Heritage can be both 'tangible' in the form of objects, historic buildings, public monuments and museum collections, or 'intangible' in the form of memories, stories and experiences. The RSA Heritage Index identifies six forms of heritage:
  - Historic built environment
  - Museums, archives and artefacts
  - Industrial heritage
  - Parks and open space
  - Landscape and natural heritage
  - Cultures and memories[1]
- The now-toppled statue of Edward Colston in Bristol is an example of the link between heritage and systemic racism. Protests about the statue focused on how celebrating Colston's charitable work ignores the fact that he was a slave trader involved in the brutal oppression of black people. Statues like Colston's obscure a more complex heritage, in favour of one that celebrates a white elite.
- Events like this raise important questions about what existing heritage we should protect and what new representations of our histories must be created to ensure that the next generation inherit a more **inclusive** story of our past.
  - **Black respondents to the 2019/20 Taking Part Survey reported visiting heritage sites less often (41%) compared to other ethnicities (60-75%). Additionally, it was observed that Asian respondents (60%) were less likely to have visited than white respondents (75%) (DCMS, 2020).**
  - **YouGov interviewed over 1,200 BAME Britons. 56% support the removal of all statues linked to slavery and 69% are in favour of updating the school curriculum to include Britain's colonial past (YouGov, 2020)**

1 Antink, B. et al (2020) *Heritage for Inclusive Growth.* Available here: https://www.thersa.org/globalassets/reports/2020/the-rsa-heritage-for-inclusive-growth.pdf

What needs to change?

- Whose heritage is represented, and how, are big questions that we believe design thinking can help us to address.
- How can we challenge expressions of systemic racism by learning about the heritage of ourselves and others? How can young people feel empowered through exploring heritage? What kind of heritage do we want to leave for the next generation?

How to approach the brief

When tackling this brief, you might want to focus on:

- Local community: investigate what young people and communities currently think about the heritage in their local area. What could a more inclusive and diverse 'heritage' look like?
- Existing projects: find out about what other people are already doing to make heritage more inclusive. You might want to look at museums, schools, archives, galleries, community groups and storytellers.
- Education: how might our heritage help educate people about systemic racism in our past and present day. How can we redesign educational heritage experiences to achieve this?
- Barriers: what are some of the current barriers to engaging young people with heritage? Does a lack of representation exclude some people? Are there geographical or financial barriers to accessing more diverse heritage experiences?

Here are some examples of proposals that could meet this design brief:

- A new public monument for your local area that reveals a previously hidden part of its history
- A story telling exhibition that captures diverse experience and collective memories like **this project from Beatfreeks**
- An app that provides information about underrepresented local history and heritage when you scan your phone over specific landmarks

Further Resources

- What is systemic racism? Kids' questions answered (video 4 mins)
- What is white privilege? (video 3 mins)
- The Black Curriculum
- How to involve young people in heritage resource pack
- BBC Black and British resources
- National Trust 'How are we challenging our history'
- Historic England and Inclusive Heritage

Submission Criteria

Pupils' proposals will be evaluated based on the following criteria:

1

Social and environmental impact:

- How can it make a positive difference to people or the natural world?
- How will it use materials and resources in a sustainable way?

2

Rigorous research and compelling insights:

- Have you undertaken first hand research by identifying the needs and motivations of people affected by the problem in your brief? Have you conducted research into the wider context of the problem on the internet or through reading material?
- How does your proposal build on the insights you have gained from your research?
- How does your proposal respond to the needs and motivations of people identified through your research?
- How did you develop your proposal by incorporating feedback and testing new ideas through prototyping and iterating?

3

Viability:

- Have you considered how your proposal will work in practice?
- Have you considered the cost of your proposal?
- What potential challenges have you identified that might prevent your proposal working in practice, and how could these be overcome?
- How would you measure the success of your proposal if it became a reality?

4

Creativity and innovation:

- What makes your proposal different from existing solutions? How might it be better or more useful?
- What unexpected or surprising elements are included in your proposal? What value do these add to the idea?

How to submit your work

You may enter as a team or individually. To enter your work into the RSA Pupil Design Awards you will need to present your proposal on **six A3 boards.** These six boards need to tell the story of your design thinking process from research to final idea. The judges will be looking for the story of how your design developed over time. When the judges first look at your work, you won't be there to explain it, so your six boards need to do all the explaining for you!

Remember, this is the Pupil Design Awards, so make sure you think about how your boards look. We don't just want pages of writing. Include sketches, photos, technical drawings and images of any models/ prototypes you have created.

The six boards:

1: Research

What design brief are you tackling?

What research have you done to investigate the challenge and understand how the people/ environment are affected?

How did you conduct some primary research to understand the issue better?

2: Findings

What is the specific problem you are focusing on?

What were your key findings from your research?

What were your insights from your research?

3: Ideation

How have you explored potential ideas?

What ideas did you decide to explore further?

What was successful/ unsuccessful about them?

4: Testing & Development

How did you test your idea?

Who did you ask for feedback?

How did you incorporate feedback into your proposal?

5: Impact

How could your proposal work in the real world?

What could be the challenges you might face when putting your proposal into the real world?

What positive impact will your proposal have?

6: Final Idea

Tell us about your final idea in one statement.

Who is your proposal aimed at and why?

What makes it different to existing solutions?

Judging Process

The Pupil Design Awards will be judged in three categories: Year 7&8, 9&10 and Year 12. All entries must be made via our website **www.thersa.org/pda** and the final deadline for submissions is the 28th May - check our website for updates.

The judging process is divided into two stages and the panellists for each category will include Student Design Award Alumni, Royal Designers for Industry, practising designers and RSA staff. The judges will look at all of the projects entered and using the judging criteria they will select three to five projects per age category to be shortlisted.

Deadline

- The final deadline for entries is the 28th May 2020.

Judging Stage 1: Shortlisting

- The judges look at all of the submissions.
- Using the judging criteria, they select a handful of projects per category to be shortlisted.
- The RSA team contacts all competition entrants to let them know whether or not they have been shortlisted.

Judging Stage 2: Presentation & Awards Ceremony

- If your work is shortlisted, you will be invited to the final presentation event in July.
- You will have the opportunity to present your project to the judges in any way that you choose. There will then be some time for the judges to ask you questions.
- You should feel confident enough to talk about your project in front of others.
- The Awards Ceremony will take place on the same day.

Glossary

Audience - the people who your design proposal is aimed at. It's almost impossible to come up with an idea that will be able to help everyone, so it's often better to focus on a specific group of people with a specific problem and to design a proposal for them.

Anti-racism – identifying, challenging, and actively working to change the values, structures and behaviours of individual and systemic racism.

Biomimicry – a design process that looks to nature for solutions to human challenges by learning from and then imitating biological forms, processes, and ecosystems to create more sustainable designs.

Black Lives Matter – a global social movement for racial justice and equality.

Campaign – a planned set of activities that people carry out over a period of time in order to achieve something such as social or political change.

Circular economy – a circular economy is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems.

Climate crisis – a change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.

Design thinking – Design thinking is a process and a mindset which aims to develop creative confidence and problem-solving skills through tackling complex social design challenges hands on.

Digital divide – the gap between those who have access to the latest technology and digital skills and those who do not.

Heritage – features of the past that we value and want to pass onto future generations. It can include objects, historic buildings, public monuments as well as memories, stories and experiences.

Ideation – the formation of ideas and concepts. As part of the design thinking process, ideation is the time to come up with as many ideas as possible before deciding which ones are the best ones to develop further.

Insight – an accurate and deep understanding of someone or something. This is the key bit of information or perspective you gained about the problem you are tackling that will help you decide how to address the problem and come up with ideas.

Iteration – a cyclic process of prototyping, testing, and refining your idea. Based on the results of testing the most recent iteration of a design, changes and refinements are made to improve it.

Mentor – an experienced person who is there to support and advise you throughout your design journey, maybe helping to give you a different perspective or try out something you hadn't thought of before.

Natural ecosystem – a community of organisms, where each component interacts together as a unit through biological, physical and chemical processes. A natural ecosystem is one that exists in nature, independent of any human involvement.

Primary research – research that you conduct for yourself, such as interviews or taking photographs of a space or situation, as opposed to consulting books or online research done by other people.

Proposal – A design proposal comes at the end of a project once you have completed your design journey, to summarise your idea and communicate it to others.

Prototype – the first, rough, working version of an idea which you can use to test and gather feedback to improve your idea.

Royal Designers for Industry – an award given by the RSA to designers who have had a significant impact on their field of work.

Secondary research – research that has been conducted by others but which you use to inform your work. This can be reading a book, an interview, researching online or looking at photographs someone else took and the work they did to inspire you.

Service – a number of interactions and/or objects and technologies which all come together to provide something to the user. For example, sending a letter in the post or ordering something online and getting it delivered are both services made up of different parts.

Social design – design that is used to solve complex, human problems and improve people's lives.

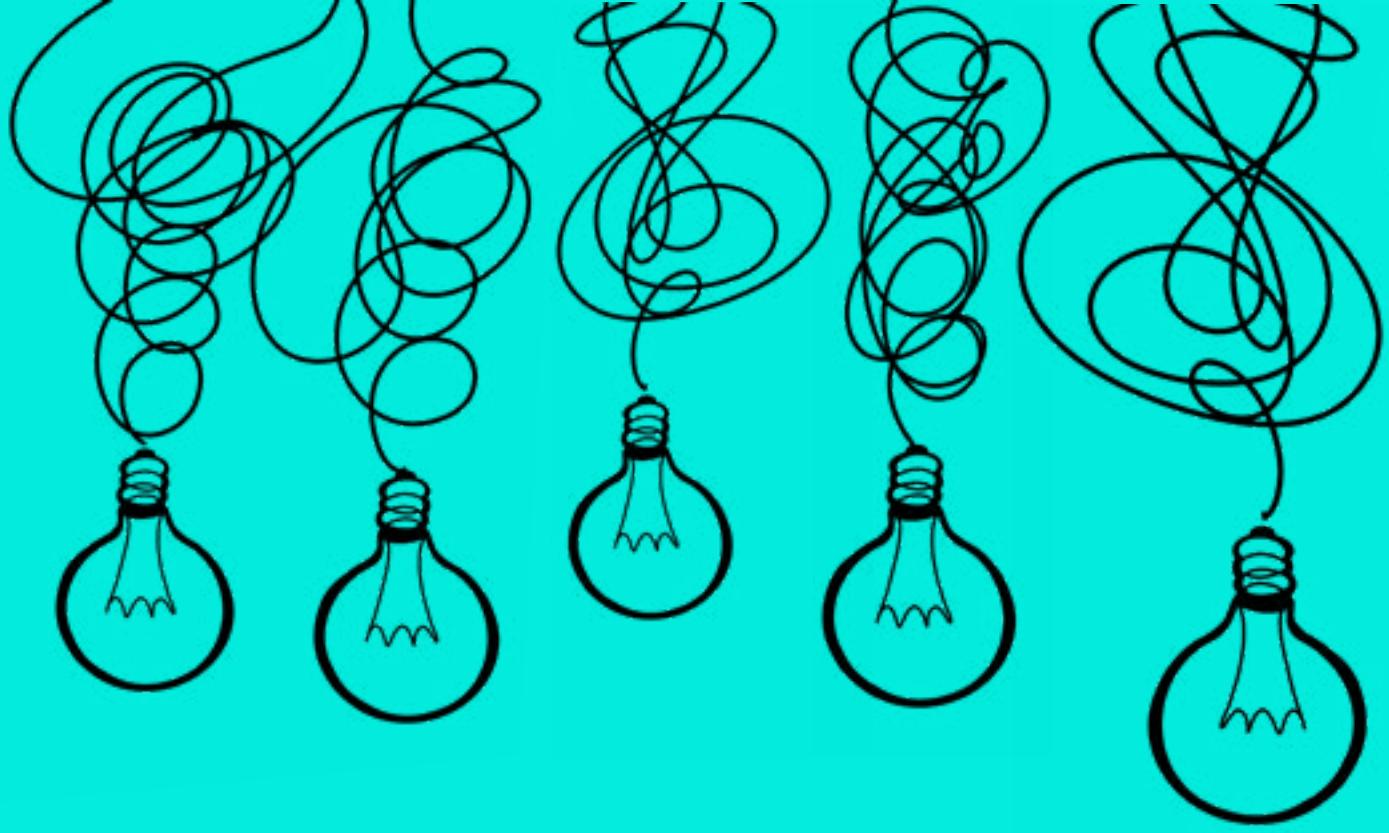
Submission criteria – are the set of guidelines that judges will follow when looking at your work so they can evaluate it in a fair and equal way, especially when comparing different projects.

Sustainability – using resources in such a way that they will continue to be available in the future and have minimal impact on the environment.

Systemic racism – the ways that racial prejudice and discrimination are embedded into the everyday actions and decisions of institutions.

“**At its core, creative confidence** is about believing in your ability to create change in the world around you.”

Tom Kelley, Creative Confidence



RSA

The Pupil Design Awards is a competition run by the RSA, a registered charity in England, Wales (212424) and Scotland (SC037784)

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