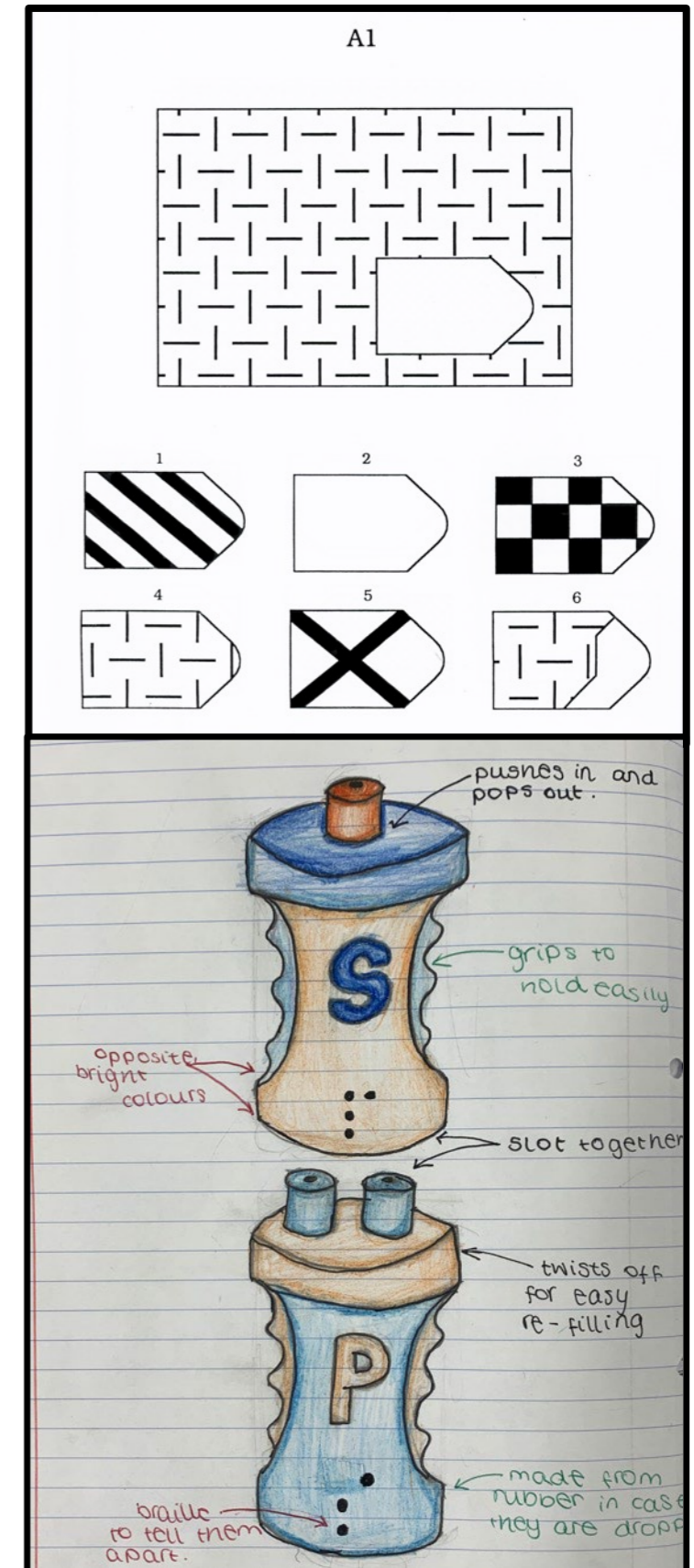


**“IF D&T WASN’T SO EASY, I WOULDN’T BE SO  
GOOD AT IT”:**

An Action Research Project Exploring Nonverbal Ability and Confidence.

# HELLO! TODAY I WILL...

- Introduce myself and sprint through my career
- Explain the rationale behind my research
- Explain the methodology of my action research
- Present the results
- Discuss the findings, failures, and takeaways
- Q&A (if we have time)

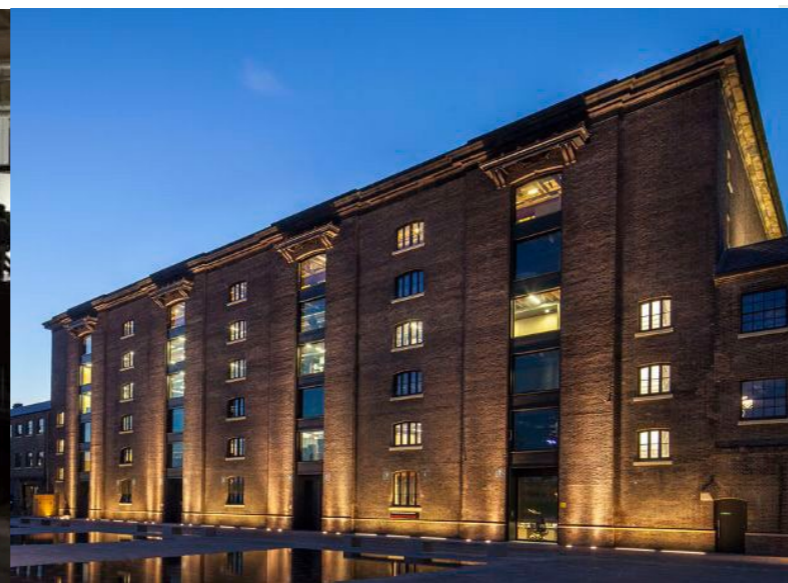
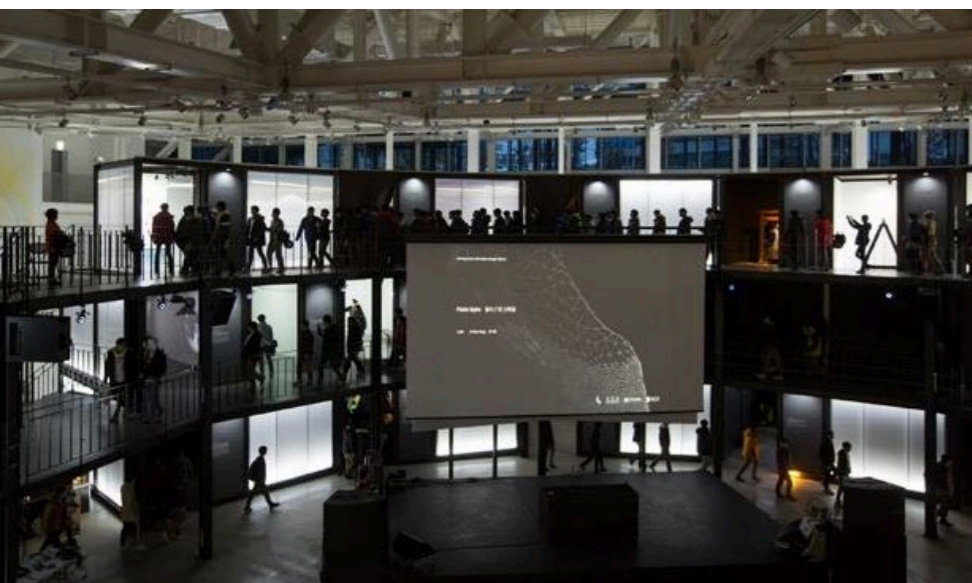


# ARTIST / DESIGNER / EDUCATOR

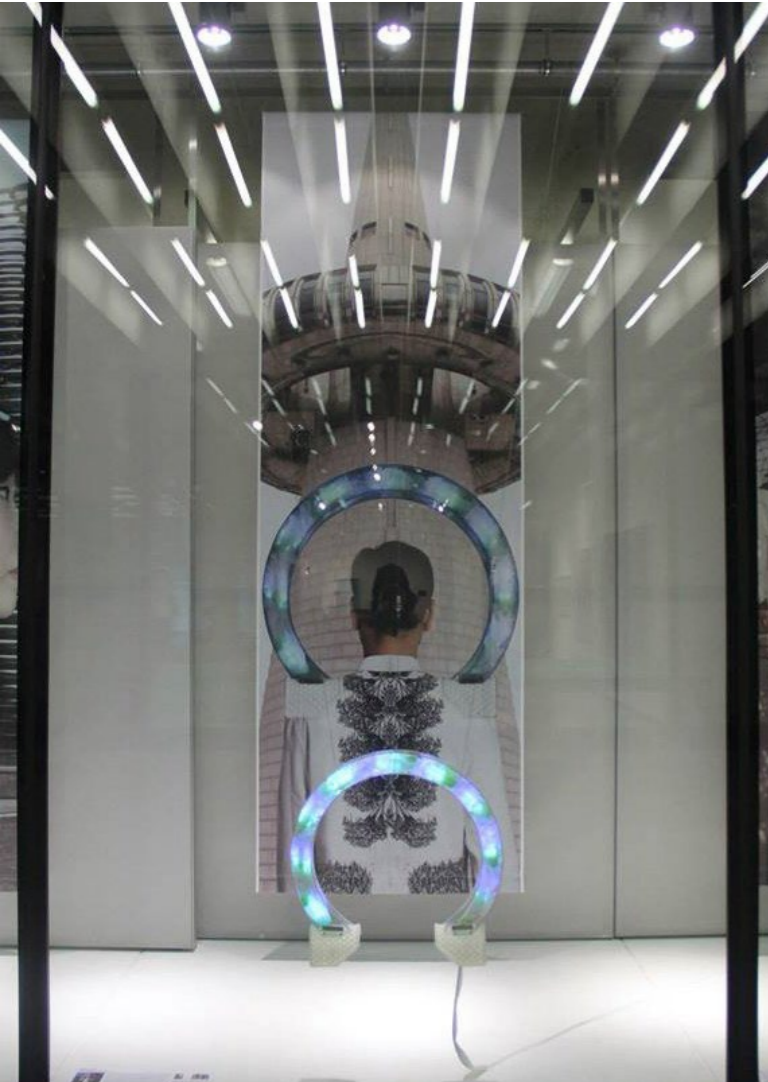
- Masters of Education
- Lecturer in BA Environment Design, Architecture Department



# ARTIST / DESIGNER / EDUCATOR



# PROJECT BASED / COLLABORATIVE / EDUCATIONAL



# INTERDISCIPLINARY GALLERY ENVIRONMENTS



# MUSEUM EXHIBITIONS



# INTERACTIVE MEDIA





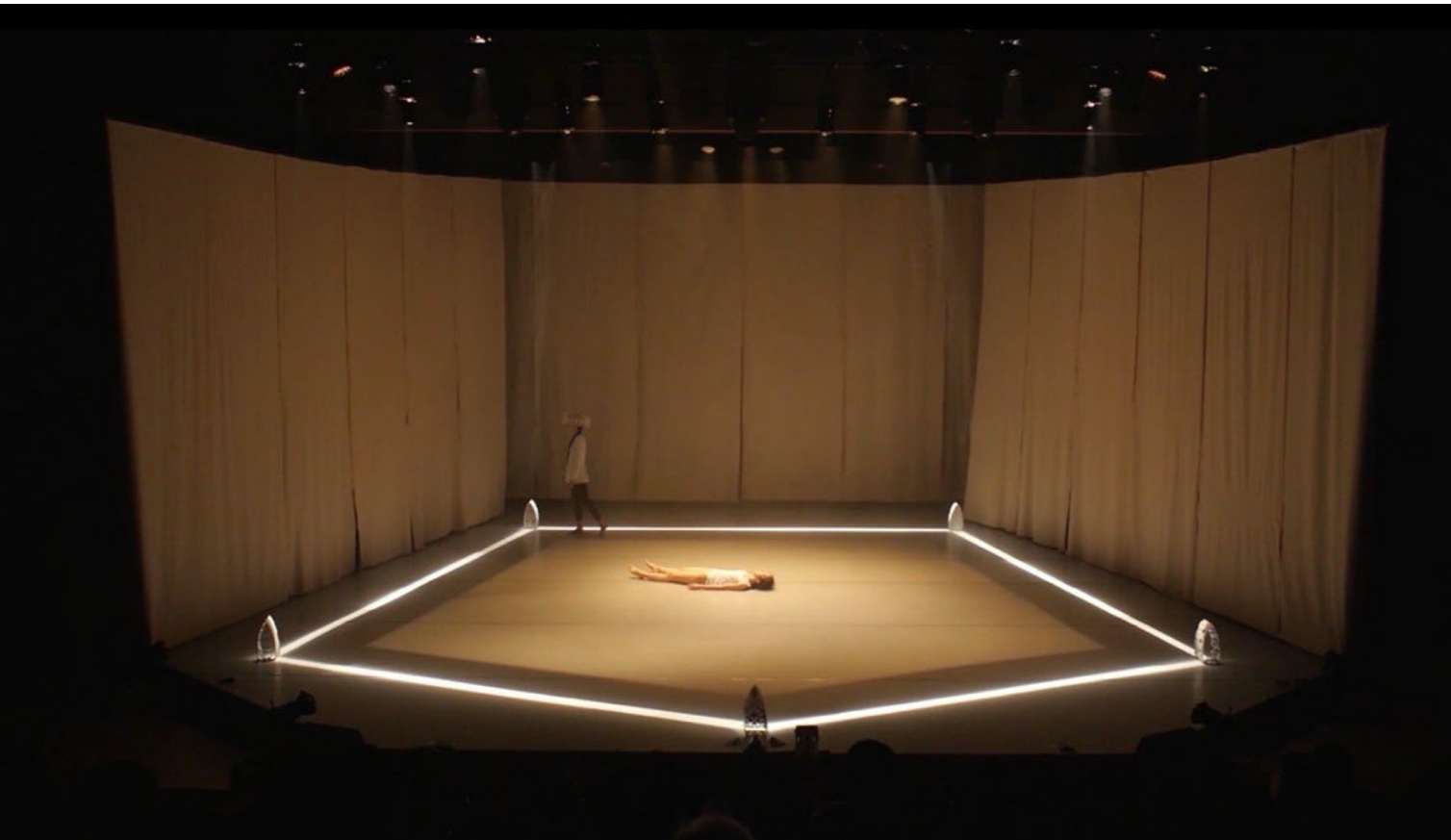
# PERMANENT / COMMUNITY-BASED SCULPTURE



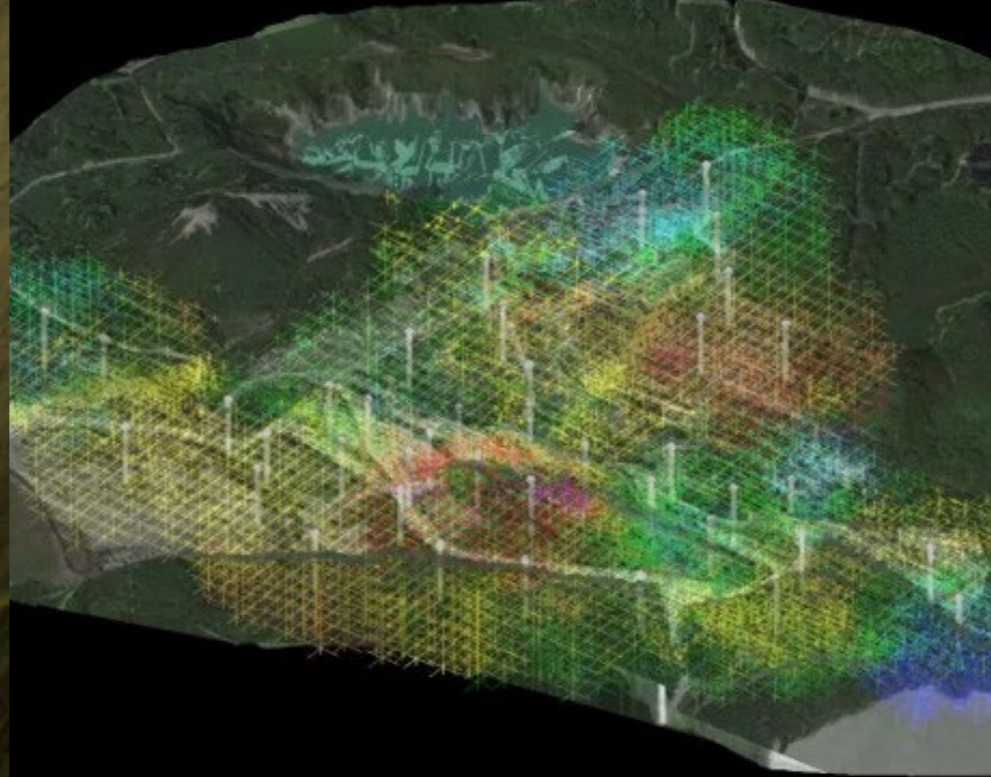
# THEATRE DESIGN / PLAYS



# THEATRE DESIGN / CONTEMPORARY DANCE



# COMPUTER GAMES / VIRTUAL ENVIRONMENTS



# SYNTHESIS OF DIGITAL AND ANALOGUE



**DESIGN ABILITY  $\neq$  CONFIDENCE**

**RATIONALE**

# RATIONALE – PERSONAL

## Roman weapons.

Romans had no gun powder so they had no big guns but they did have catapults.

ballistas.

Romans had catapults  
Catapults with round stones were called ballistas.

Catapults fired <sup>arrows</sup> arrows, <sup>stone</sup> led bullets, or round stone balls.

A single shot catapult could knock someone out or even kill someone.

## Roman pottery

Roman pottery usually had a round or pointy bottom balls.

The pointy bottom ball is always used for drink or liquid.

The most common pattern is the Greek famous one.

see me please

## Religion

Certain people believed different

Some people believed in different gods depending where they come from, for example people from somewhere near a river believed in Neptune. Neptune.

Some gods are named after planets like Venus and Mars and lots more.

## Roman Armour

Citizens

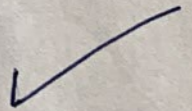
asked

chain

Roman citizens were asked if they wanted to wear chain

mail or the new Roman armour for war and they wanted the new Roman.

The new Roman was pieces of metal bent round the body and tied.





# RATIONALE – PERSONAL

Cognitive ability testing.

Cognitive Ability Tests (CATS) Alex Oct 1998.  
aged 10.

|              | <u>Score</u>     | <u>SAS</u> | <u>ST</u> | <u>NRN</u> |                |
|--------------|------------------|------------|-----------|------------|----------------|
| Verbal       | $\frac{55}{100}$ | 92         | 4         | 30         | AVERAGE.       |
| Quantitative | $\frac{18}{60}$  | 74         | 2         | 4          | BELOW AVERAGE. |
| Non Verbal   | $\frac{76}{80}$  | 116        | 7         | 86         | ABOVE AVERAGE. |

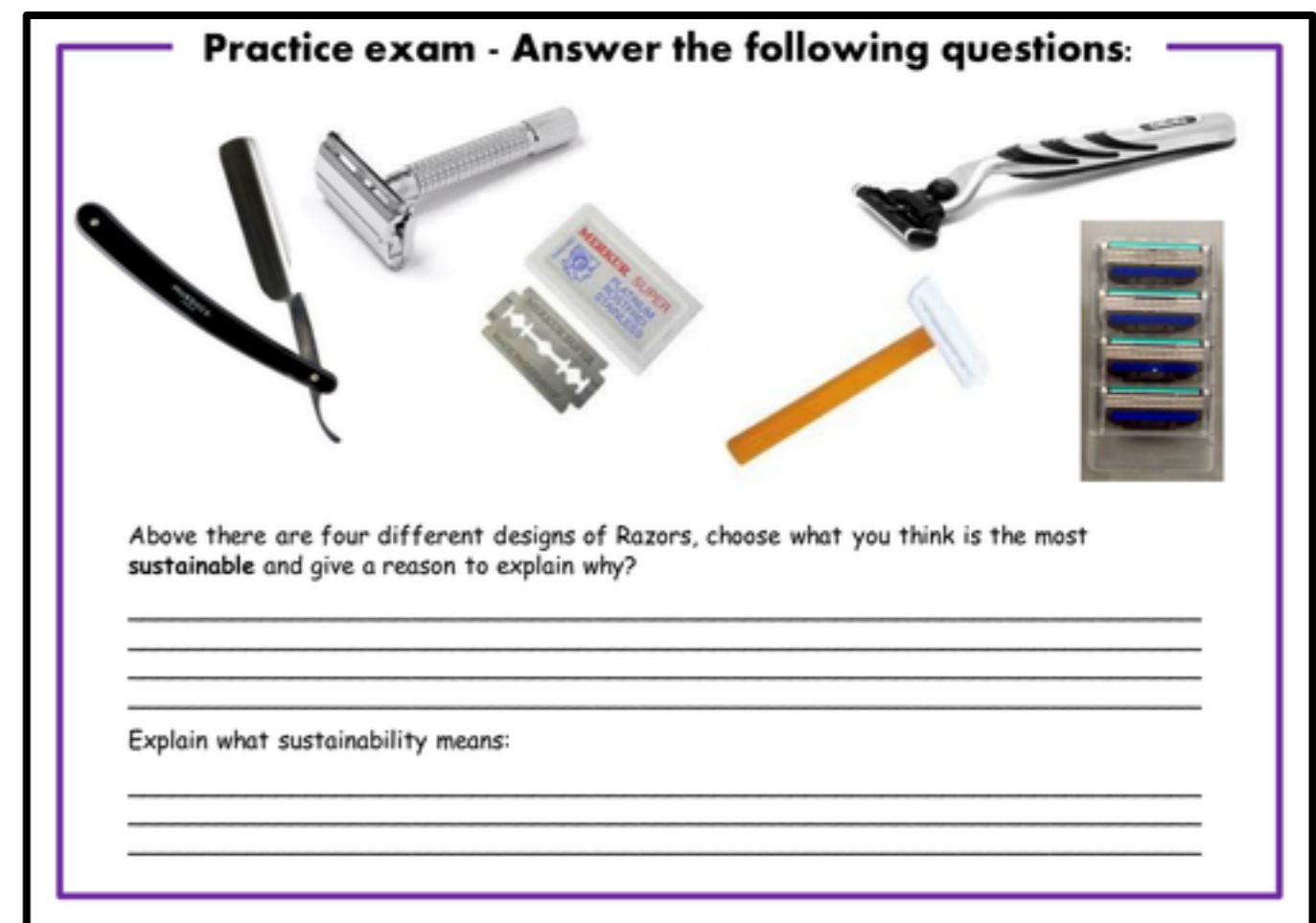
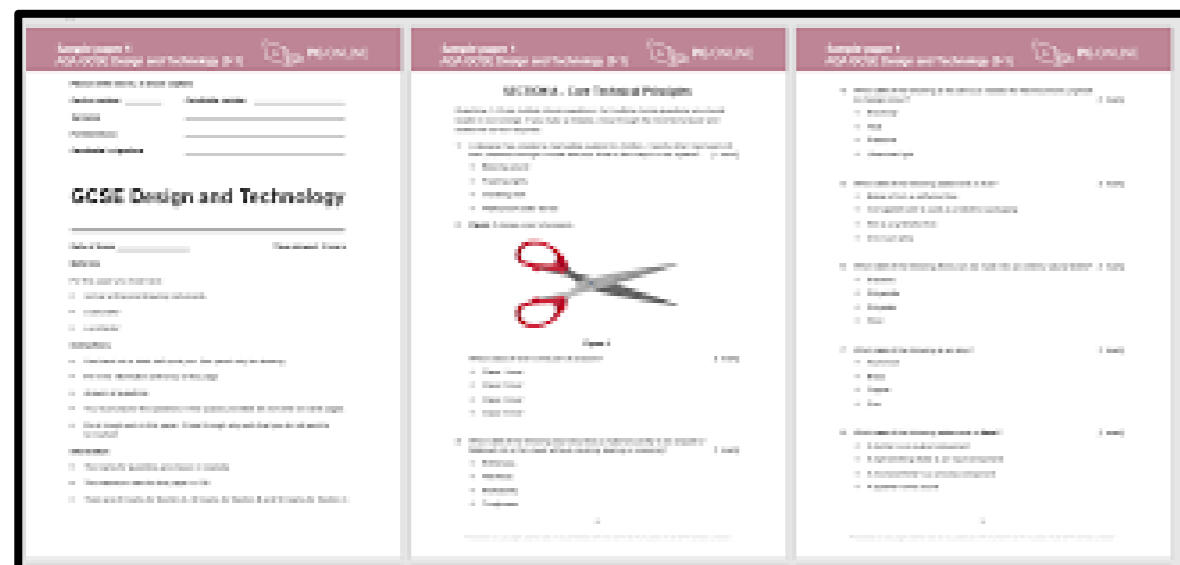
(was 5<sup>th</sup> highest in class.)

↑  
100 is middle score takes age into consideration

- Non-verbal reasoning - "thinking with shapes". This doesn't involve reading but measures a child's ability to solve problems using shapes or patterns and is similar to a typical IQ test.

# RATIONALE – PLACEMENT SCHOOLS

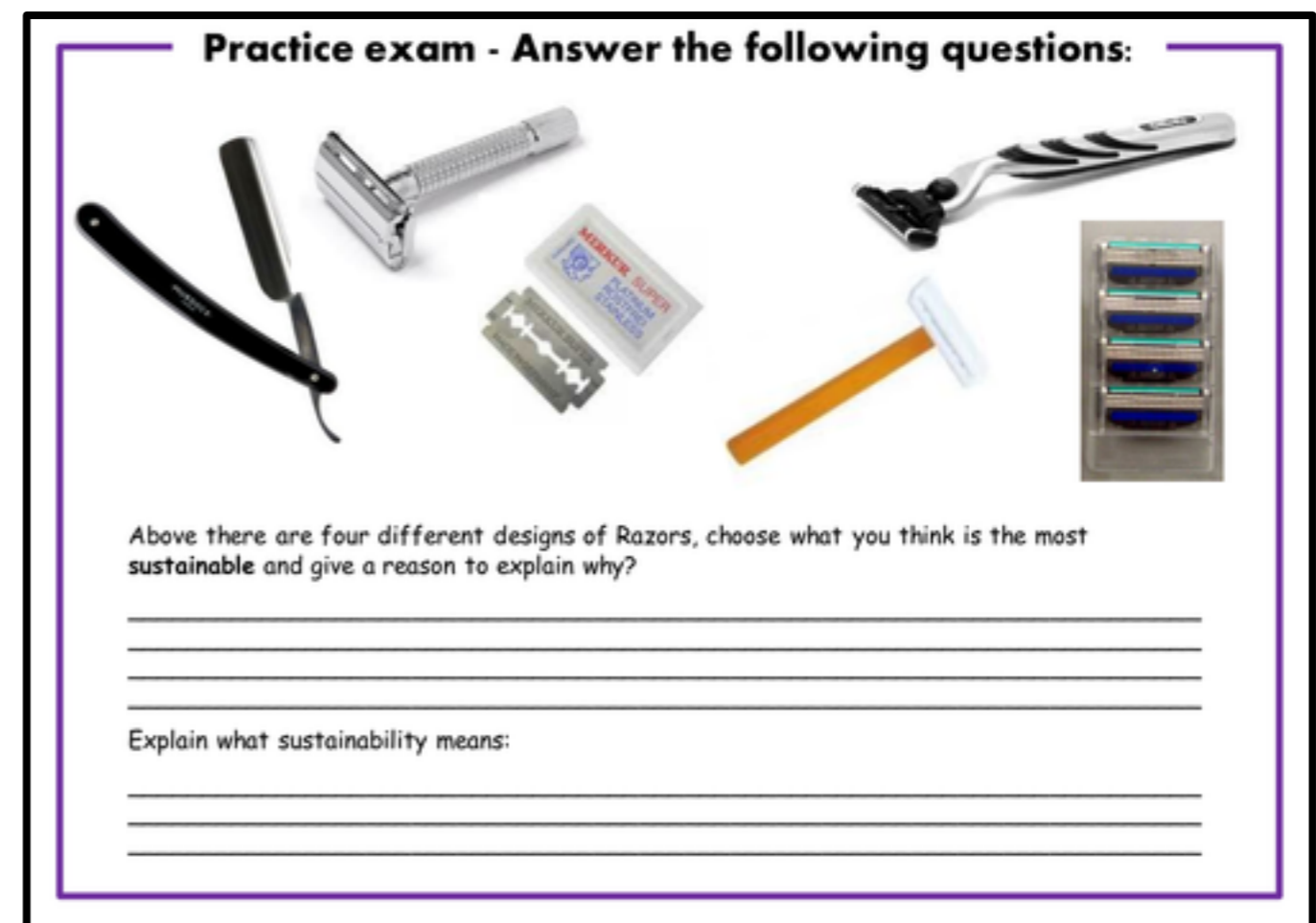
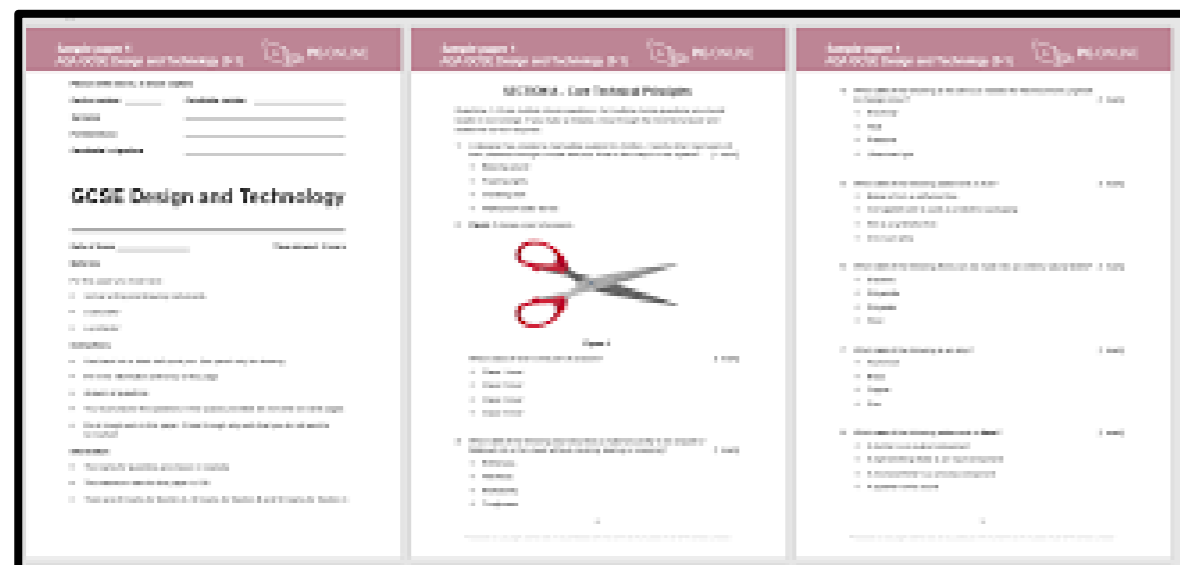
- I was shocked to see that the D&T assessment methods did not reflect the realities of the design industry well at all. Memory and literacy based.



- GCSEs and A Level assessment in D&T:
- 50% written, memory-based exam – 2 hours total.
- 50% coursework, hugely based on literacy and only 15% practical design work.

# RATIONALE – PLACEMENT SCHOOLS

- I was shocked to see that the D&T assessment methods did not reflect the realities of the design industry well at all. Memory and literacy based.



- A Level assessment in D&T:
  - - 50% written, memory-based exams – 2 papers – 4 hours total.
  - - 50% coursework, hugely based on literacy and only 15% practical design work.

# RATIONALE – PLACEMENT SCHOOLS

During my teacher training placements, I became aware that highly capable teachers and students in the Design and Technology (D&T) department considered themselves unintelligent due to a lack of literacy, working memory or low attainment in academic subjects such as English, mathematics or sciences.

# RATIONALE – PLACEMENT SCHOOLS

“I’m only a DT teacher, but the MEd from Cambridge made other teachers take me seriously.”

– Participant

# RATIONALE – PLACEMENT SCHOOLS

“If D&T wasn’t so easy, I wouldn’t be so good at it.”

– D&T teacher

“You have an ethical obligation to steer intelligent students away from D&T GCSE and A Level – good universities don’t respect it.”

– Participant

“I can’t believe D&T teacher training gets funding.”

– Participant

# RATIONALE – PLACEMENT SCHOOLS

“I’m good at drawing but I’m not the sharpest, Sir.”

– School student

“Let’s do the easy option, I’m thick.”

– School student

“I’m good at sports, and I love music, but I’m not too bright.”

– School student

# AIMS

- Associate creative, problem-solving abilities and D&T with intelligence.
- Identify students who show intelligence and talent in the subject.
- Boost the confidence of students who show intelligence and talent in the subject.



# RESEARCH QUESTIONS

- RQ1. What are the existing perceptions of intelligence required to do well in the subject of D&T in relation to other subjects?
- RQ2. What are the levels of self-perceived confidence for students with an aptitude for D&T, as indicated through my self-efficacy tests before my intervention?
- RQ3. Has there been a change to the levels of self-perceived confidence for students with an aptitude for D&T, as indicated through my self-efficacy tests after my intervention?

# MY PLAN

Confidence test at the start of the intervention.




Action research to identify and boost the confidence of students showing design-specific intelligences.



Second confidence test at the end of the intervention, to measure the impact.

# TESTING FOR CONFIDENCE

# LITERATURE REVIEW / METHODOLOGY



**Valuing of Subject**  
How much students feel that an academic subject is interesting, important, and useful.

Grades 6-12

| Question   | Response Options       |                      |                      |                   |                       |
|--|------------------------|----------------------|----------------------|-------------------|-----------------------|
| How interesting do you find the things you learn in [SUBJECT] class?             | Not at all interesting | Slightly interesting | Somewhat interesting | Quite interesting | Extremely interesting |
| How often do you use ideas from [SUBJECT] class in your daily life?              | Almost never           | Once in a while      | Sometimes            | Frequently        | Almost always         |
| How important is it to you to do well in [SUBJECT] class?                        | Not at all important   | Slightly important   | Somewhat important   | Quite important   | Extremely important   |
| How much, if at all, do the topics in this class relate to your personal values? | Not at all             | A little bit         | Somewhat             | Quite a bit       | A tremendous amount   |
| How useful do you think [SUBJECT] class will be to you in the future?            | Not at all useful      | Slightly useful      | Somewhat useful      | Quite useful      | Extremely useful      |

**Educational self-efficacy scale**

Think about yourself at Imperial College London when you answer the following questions.

**Item 1:** How confident are you that you can complete all the work that is assigned in your modules?

|                      |                    |                    |                 |                     |
|----------------------|--------------------|--------------------|-----------------|---------------------|
| Not at all confident | Slightly confident | Somewhat confident | Quite confident | Extremely confident |
|----------------------|--------------------|--------------------|-----------------|---------------------|

**Item 2:** When complicated ideas are presented in your modules, how confident are you that you can understand them?

|                      |                    |                    |                 |                     |
|----------------------|--------------------|--------------------|-----------------|---------------------|
| Not at all confident | Slightly confident | Somewhat confident | Quite confident | Extremely confident |
|----------------------|--------------------|--------------------|-----------------|---------------------|

**Item 3:** How confident are you that you can learn all of the material presented in your modules?

|                      |                    |                    |                 |                     |
|----------------------|--------------------|--------------------|-----------------|---------------------|
| Not at all confident | Slightly confident | Somewhat confident | Quite confident | Extremely confident |
|----------------------|--------------------|--------------------|-----------------|---------------------|

**Item 4:** How confident are you that you can do the hardest work that is assigned in your modules?

|                      |                    |                    |                 |                     |
|----------------------|--------------------|--------------------|-----------------|---------------------|
| Not at all confident | Slightly confident | Somewhat confident | Quite confident | Extremely confident |
|----------------------|--------------------|--------------------|-----------------|---------------------|

**Item 5:** How confident are you that you will remember what you learned in your current modules, next year?

|                      |                    |                    |                 |                     |
|----------------------|--------------------|--------------------|-----------------|---------------------|
| Not at all confident | Slightly confident | Somewhat confident | Quite confident | Extremely confident |
|----------------------|--------------------|--------------------|-----------------|---------------------|

- Self-efficacy / self-concept
- I adapted scales from Jorgen Frost and Ernst Ottem, Nadya Fouad and Philip Smith, and Panorama Education.
- These scales attempted to measure self-efficacy in high schools.

# LITERATURE REVIEW / METHODOLOGY

**How confident are you that you can do the hardest work that is assigned in your subjects?**

|                          |                      |                    |                    |                 |                     |
|--------------------------|----------------------|--------------------|--------------------|-----------------|---------------------|
| Art & Design             | Not at all confident | Slightly confident | Somewhat confident | Quite confident | Extremely confident |
| Design & Technology      | Not at all confident | Slightly confident | Somewhat confident | Quite confident | Extremely confident |
| English                  | Not at all confident | Slightly confident | Somewhat confident | Quite confident | Extremely confident |
| Geography                | Not at all confident | Slightly confident | Somewhat confident | Quite confident | Extremely confident |
| History                  | Not at all confident | Slightly confident | Somewhat confident | Quite confident | Extremely confident |
| ICT & Computer Science   | Not at all confident | Slightly confident | Somewhat confident | Quite confident | Extremely confident |
| Mathematics              | Not at all confident | Slightly confident | Somewhat confident | Quite confident | Extremely confident |
| Music                    | Not at all confident | Slightly confident | Somewhat confident | Quite confident | Extremely confident |
| Modern Foreign Languages | Not at all confident | Slightly confident | Somewhat confident | Quite confident | Extremely confident |
| Physical Education       | Not at all confident | Slightly confident | Somewhat confident | Quite confident | Extremely confident |
| Religious Education      | Not at all confident | Slightly confident | Somewhat confident | Quite confident | Extremely confident |
| Science                  | Not at all confident | Slightly confident | Somewhat confident | Quite confident | Extremely confident |

Name: ..... Class: .....

Self-efficacy, self-perception test, comparing 12 core subjects.

**“How confident are you that you can do the hardest work that is assigned in your core subjects?”**

# LITERATURE REVIEW / METHODOLOGY

**How intelligent do you need to be to do well in these core subjects?**

|                          |                        |                      |                      |                   |                       |
|--------------------------|------------------------|----------------------|----------------------|-------------------|-----------------------|
| Art & Design             | Not at all intelligent | Slightly intelligent | Somewhat intelligent | Quite intelligent | Extremely intelligent |
| Design & Technology      | Not at all intelligent | Slightly intelligent | Somewhat intelligent | Quite intelligent | Extremely intelligent |
| English                  | Not at all intelligent | Slightly intelligent | Somewhat intelligent | Quite intelligent | Extremely intelligent |
| Geography                | Not at all intelligent | Slightly intelligent | Somewhat intelligent | Quite intelligent | Extremely intelligent |
| History                  | Not at all intelligent | Slightly intelligent | Somewhat intelligent | Quite intelligent | Extremely intelligent |
| ICT & Computer Science   | Not at all intelligent | Slightly intelligent | Somewhat intelligent | Quite intelligent | Extremely intelligent |
| Mathematics              | Not at all intelligent | Slightly intelligent | Somewhat intelligent | Quite intelligent | Extremely intelligent |
| Music                    | Not at all intelligent | Slightly intelligent | Somewhat intelligent | Quite intelligent | Extremely intelligent |
| Modern Foreign Languages | Not at all intelligent | Slightly intelligent | Somewhat intelligent | Quite intelligent | Extremely intelligent |
| Physical Education       | Not at all intelligent | Slightly intelligent | Somewhat intelligent | Quite intelligent | Extremely intelligent |
| Religious Education      | Not at all intelligent | Slightly intelligent | Somewhat intelligent | Quite intelligent | Extremely intelligent |
| Science                  | Not at all intelligent | Slightly intelligent | Somewhat intelligent | Quite intelligent | Extremely intelligent |

Name: ..... Class: .....

Self-concept, self-perception test, comparing 12 core subjects.

**“How intelligent do you need to be to do well in these core subjects?”**

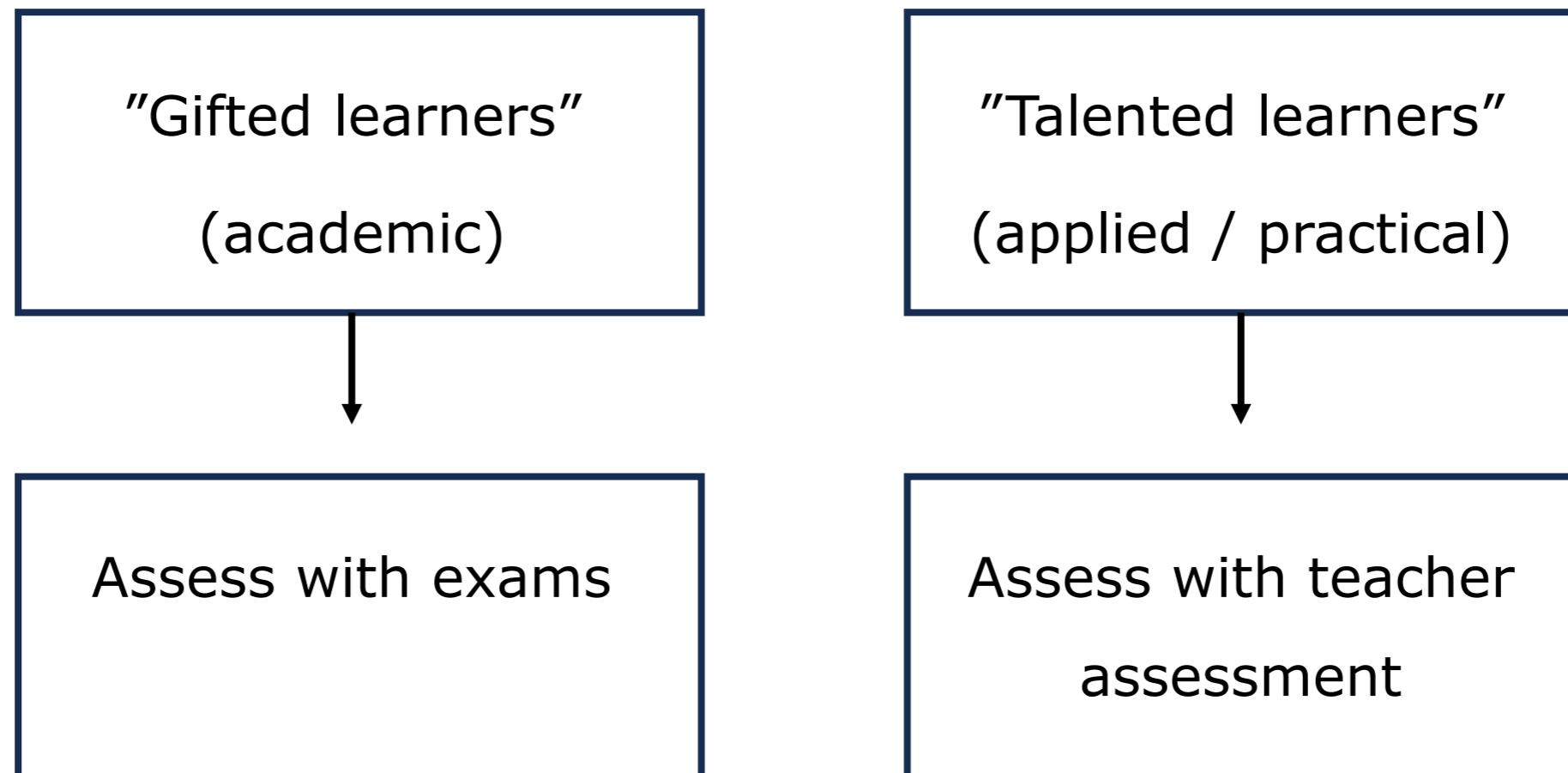
**TESTING FOR DESIGN ABILITY**

**+**

**BOOSTING CONFIDENCE**

# UK DEPARTMENT FOR CHILDREN, SCHOOLS & FAMILIES (2007-

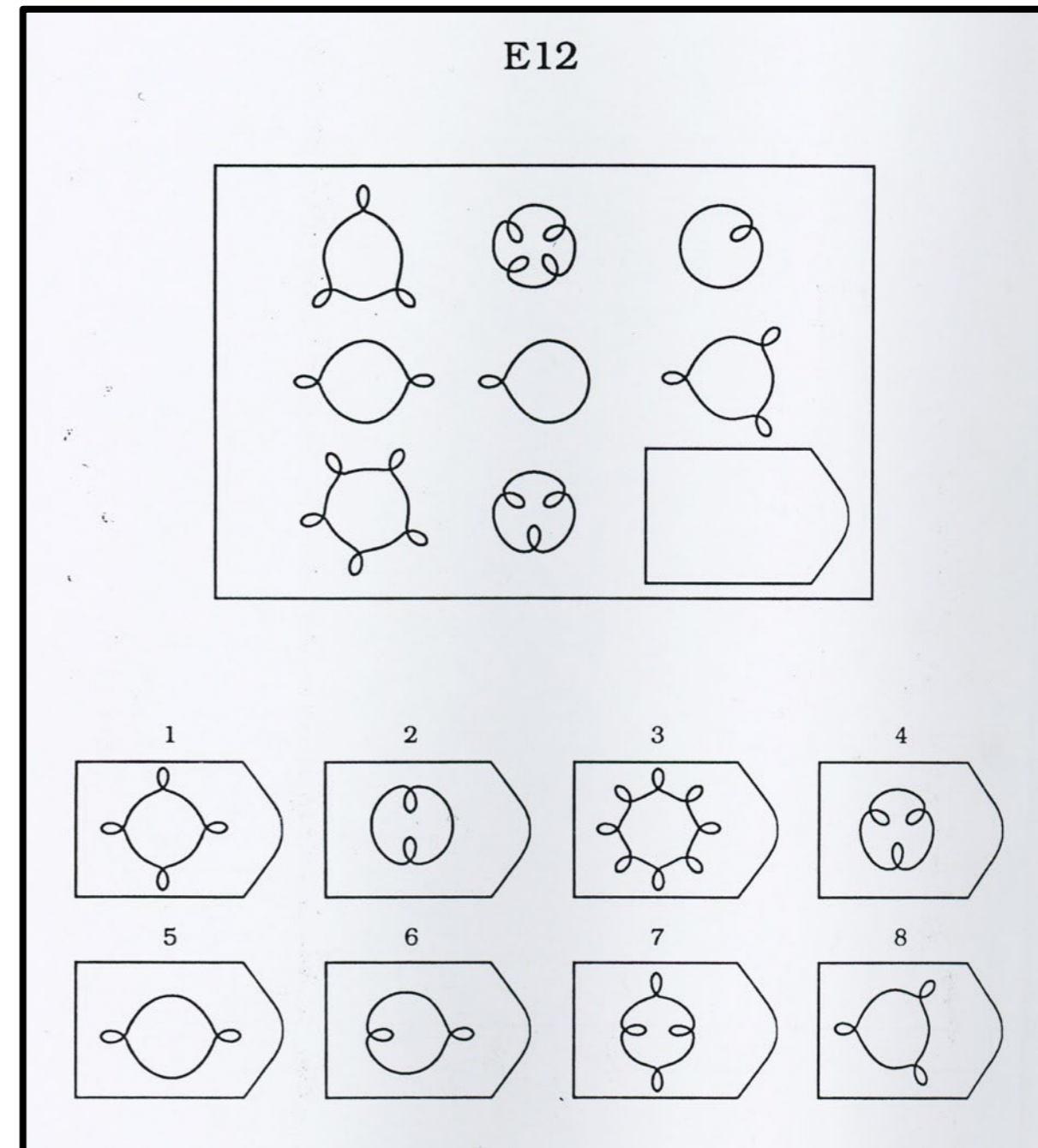
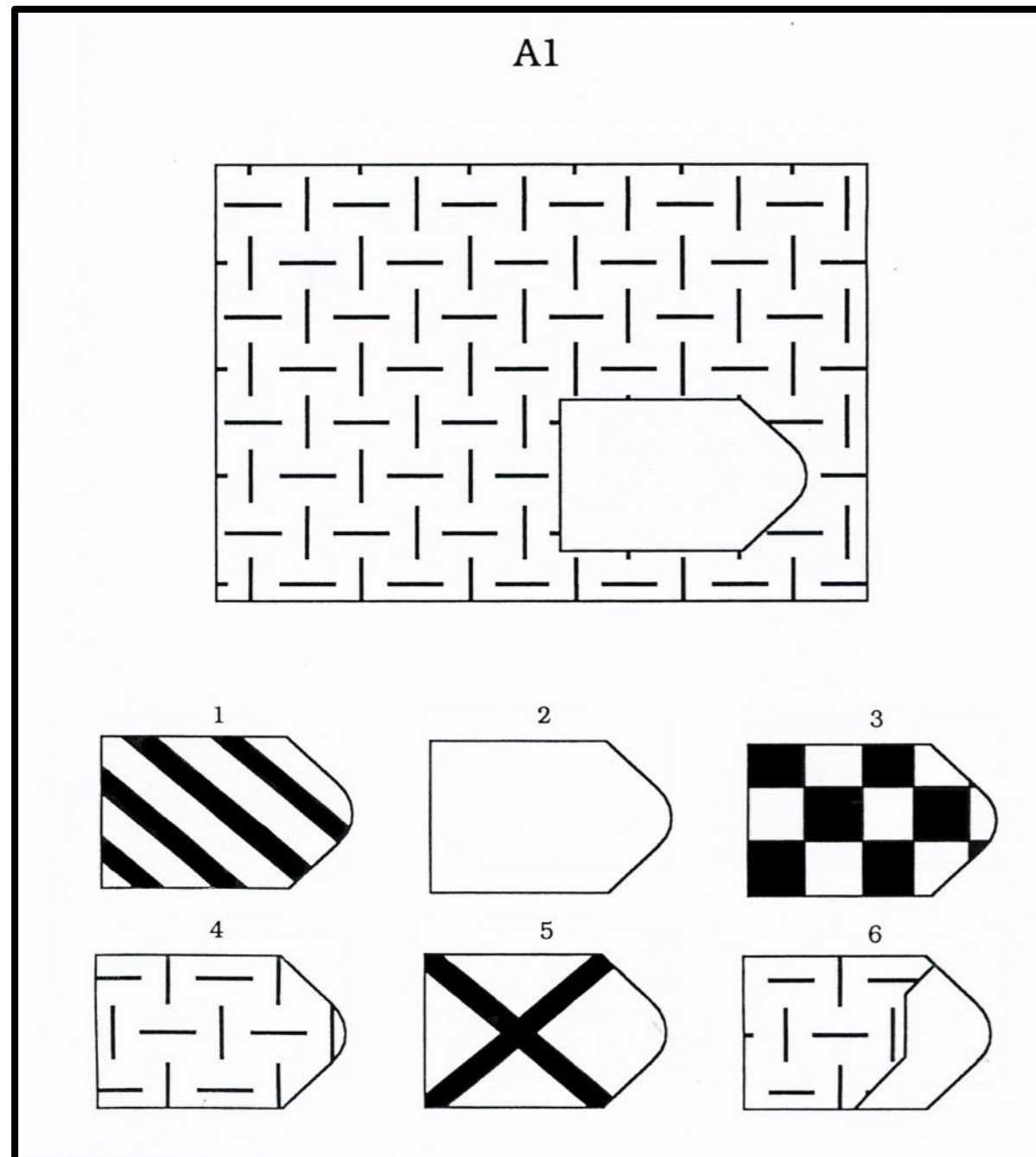
10)



- D&T is somewhere between these.
- There is no D&T-specific assessment in England.
- Twissell suggests using nonverbal subsets of CATS exams.

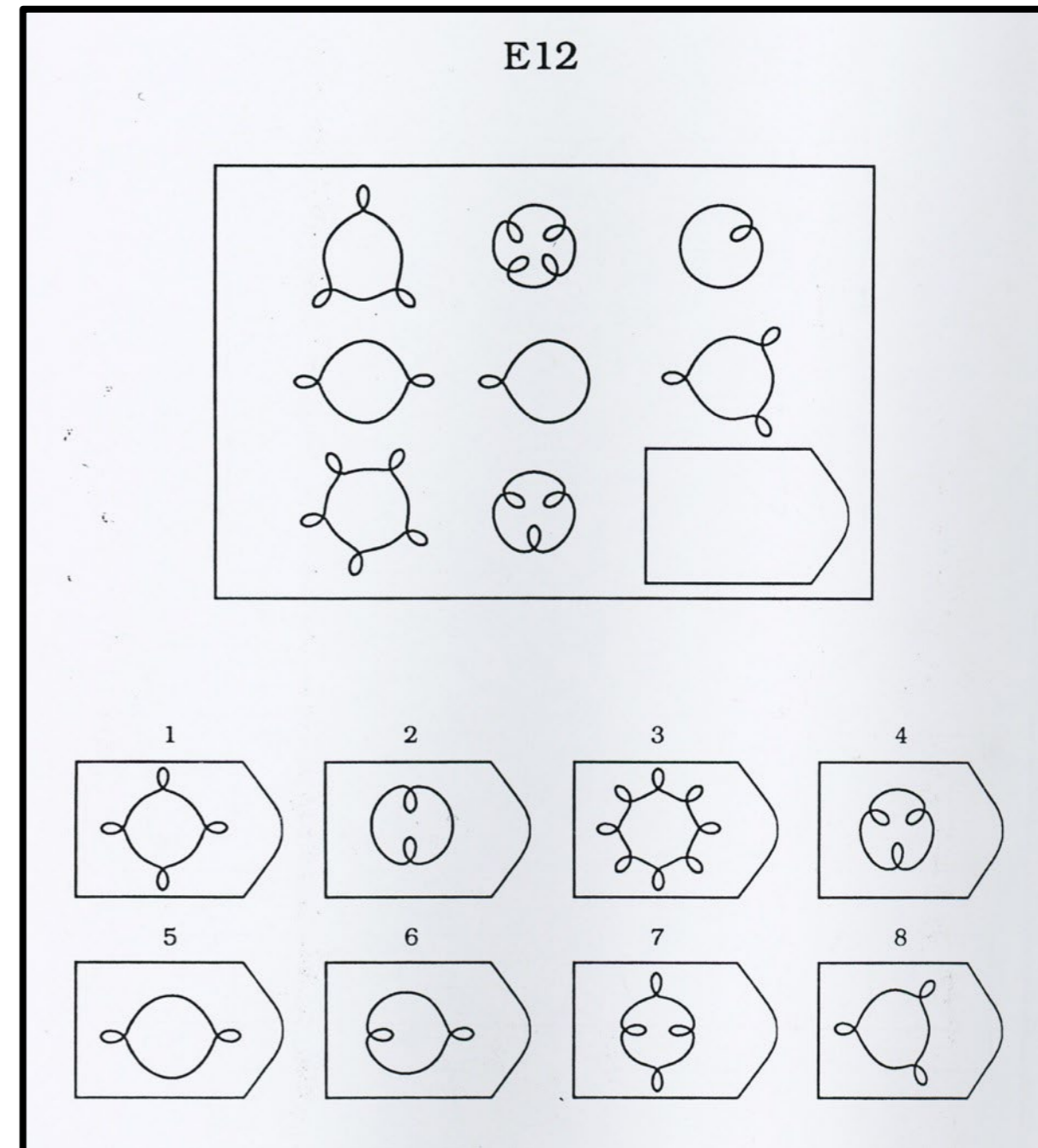
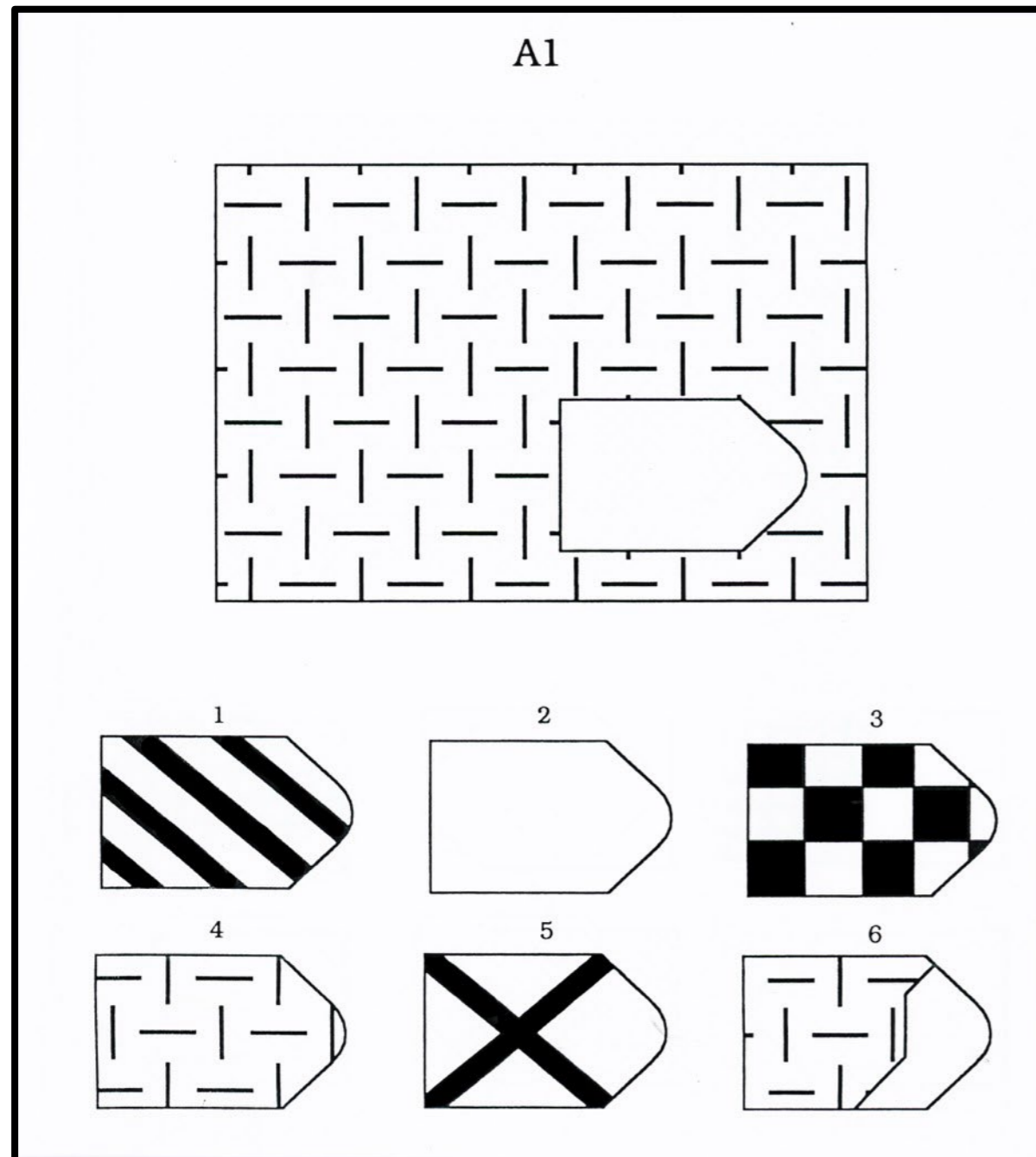


# LITERATURE REVIEW / METHODOLOGY



- My placement school SEND Hub gave me the Raven's Progressive Matrices (RPM)
- Measure "Eductive", problem-solving intelligence

# LITERATURE REVIEW / METHODOLOGY



- "Raven's Progressive Matrices are a widely used measure of nonverbal intelligence, often cited in studies of cognitive ability, confidence and learning disabilities..."
- No literacy or memory required

# LITERATURE REVIEW / METHODOLOGY

**Eductive Intelligence Grid**

Name: ..... Class: .....

| Q. No.    | A | B | C | D | E |
|-----------|---|---|---|---|---|
| 1         |   |   |   |   |   |
| 2         |   |   |   |   |   |
| 3         |   |   |   |   |   |
| 4         |   |   |   |   |   |
| 5         |   |   |   |   |   |
| 6         |   |   |   |   |   |
| 7         |   |   |   |   |   |
| 8         |   |   |   |   |   |
| 9         |   |   |   |   |   |
| 10        |   |   |   |   |   |
| 11        |   |   |   |   |   |
| 12        |   |   |   |   |   |
| Set Total |   |   |   |   |   |

TOTAL: .....

A5

B7

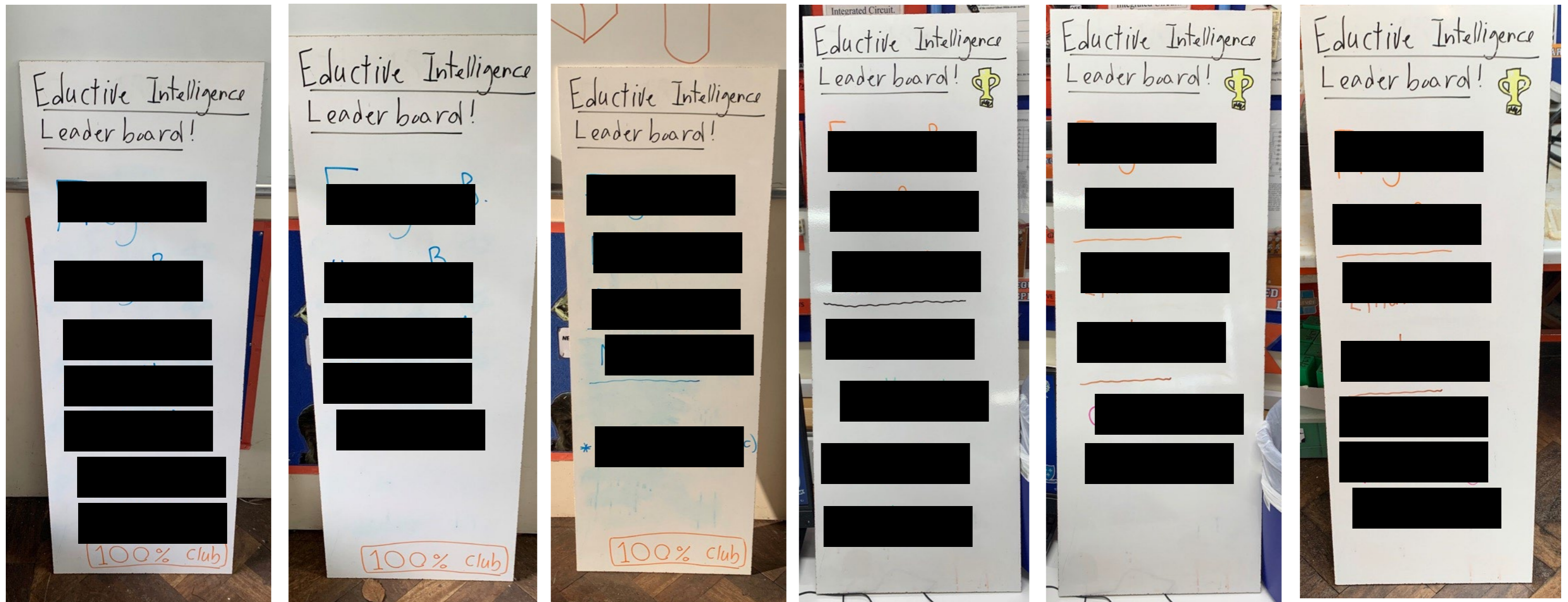
C10

E8

- First 10 minutes of each lesson
- Students logged answers in this grid
- Then we reviewed answers from last lesson

# LEADERBOARDS

- Extrinsic reinforcement of achievement
- Adding novelty, competition and engagement to the class
- Public display of those with the best “eductive” intelligences



# LEADERBOARDS

- Extrinsic reinforcement of achievement
- Adding novelty, competition and engagement to the class
- Public display of those with the best “eductive” intelligences
- The winners in the final lesson to win plastic trophies, visible on the shelf




# LEADERBOARDS

Celebrating a type of intelligence which is not normally celebrated in the classroom.

# SCHEME OF WORK – DOT BOX


- I chose to run my research with a Unit called “DOT Box”
- Created by Bill Nicholl and Ian Hosking (2009)
- Experiential, and activating many types of skill and intelligence in order to design a salt and pepper shaker (Spatial / bodily-kinesthetic / inter and intrapersonal)

## Using Simulators: Glasses



- If you wear glasses keep them on
- Use **2 pairs** together
- **Do not** look at the object before using the glasses
- **Do not** bring the object closer than about 30 cm (many older people can not compensate by bringing a product closer)

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## Using Simulators: Gloves



4<sup>th</sup> and 3<sup>rd</sup> Finger go into **ONE** loop

- 

Check you have 4 plastic finger strips
- 

Make finger Velcro into loops
- 

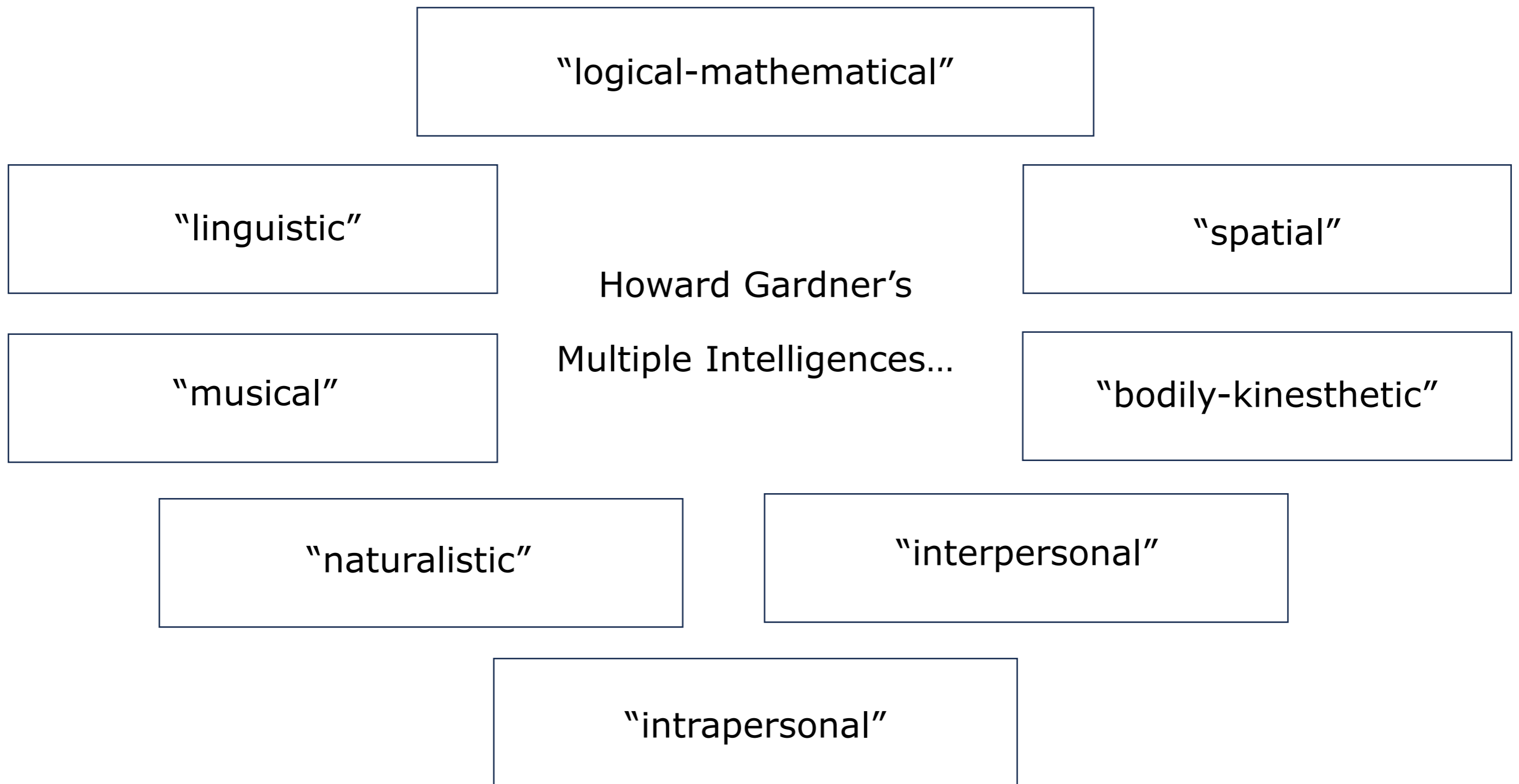
Place fingers in loops
- 

Close and tighten wrist strap
- 

Tighten finger loops
- 

Align finger strips to top of fingers

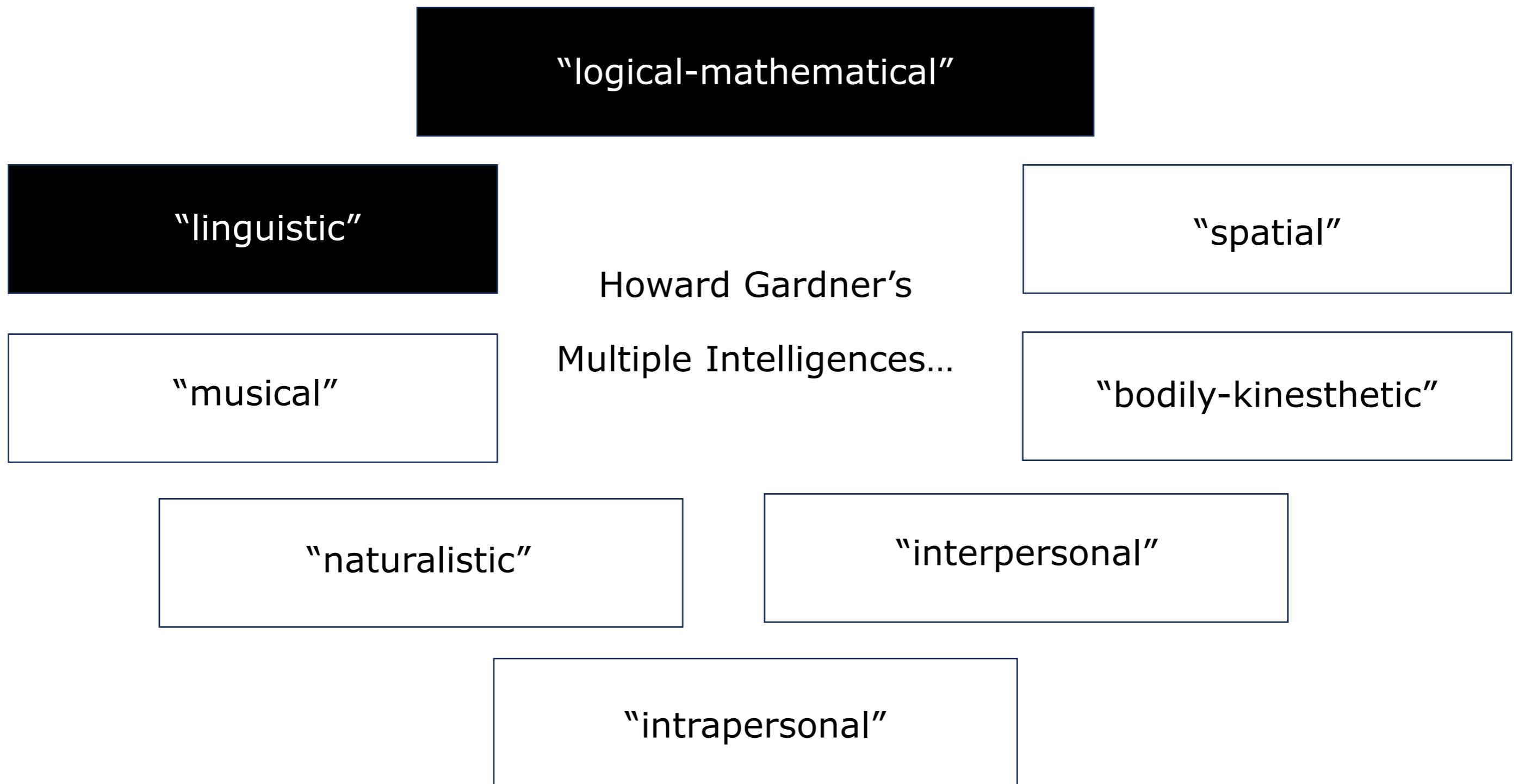
# LITERATURE REVIEW – THE SPIRIT OF MI



- Gardner asserted that across all subjects, only two types of intelligences were being valued and tested for in state schools; “linguistic” and “logical-mathematical”
- He called these “academic intelligence”

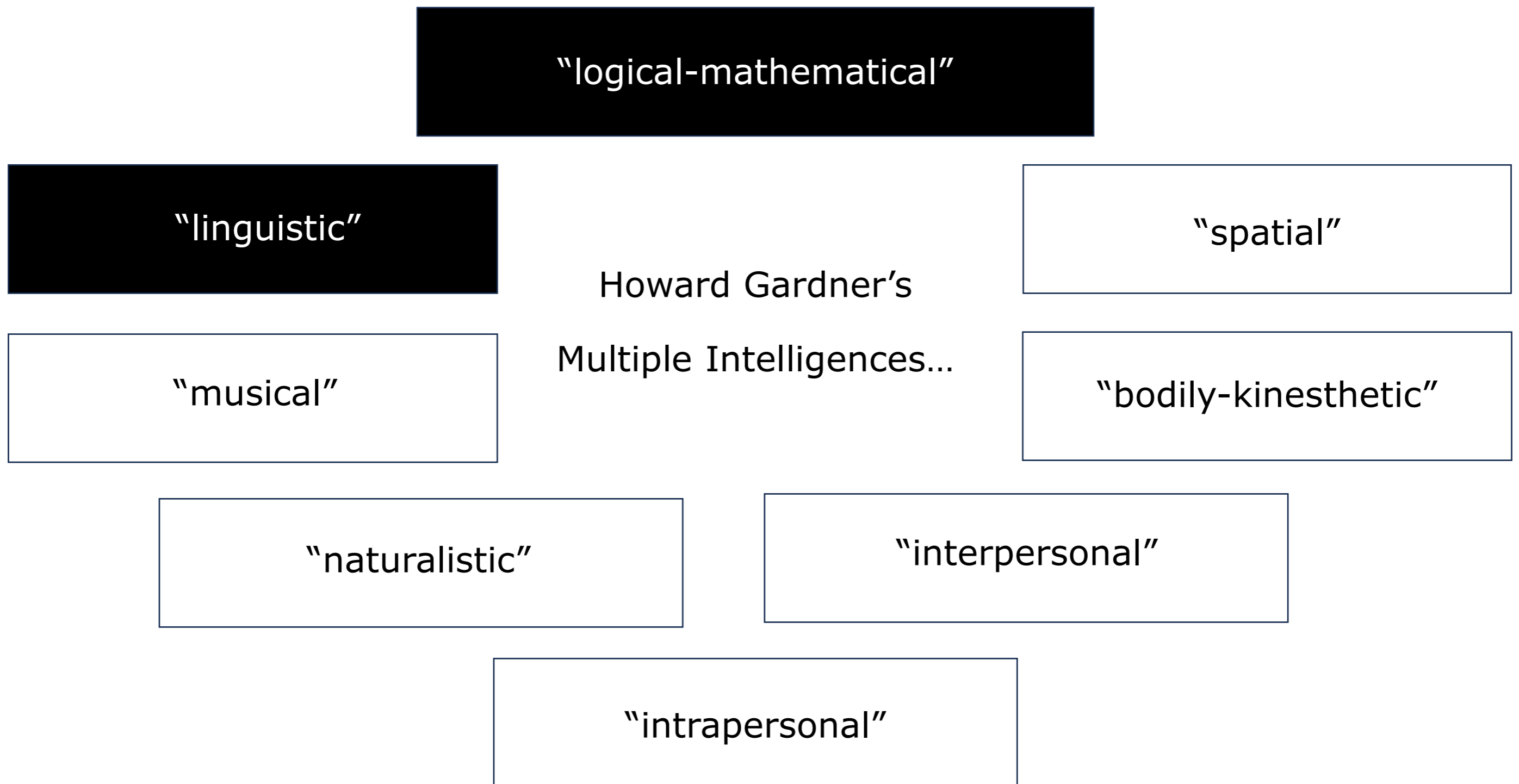


# LITERATURE REVIEW – THE SPIRIT OF MI



- This is consistent with D&T exam and coursework assessment
- Neither "spatial", "bodily-kinesthetic" nor collaborative intelligences are highly graded

# LITERATURE REVIEW – THE SPIRIT OF MI



- Gardner criticised for failing to establish measures these intelligences
- Neuroscience factor studies show no evidence for individual processes for these
- Regardless, my research takes inspiration from the ambitions of the eight intelligences as “intelligence profiles”, rather than scientifically falsifiable cognitive measures

# LITERATURE REVIEW – THE SPIRIT OF MI

- Using the 8 intelligences to structure praise and verbal persuasion in class

There are many types of intelligence!



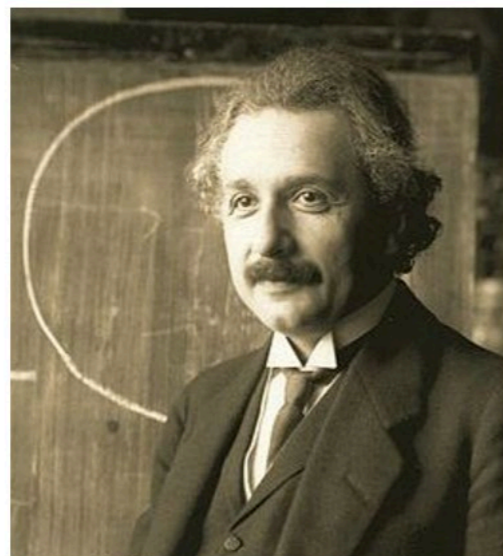
There are many types of intelligence!



## Intelligence

"Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid."

- Albert Einstein



- What do you think this means?
- How might this apply at school?

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many types of intelligence!



There are many types of intelligence!



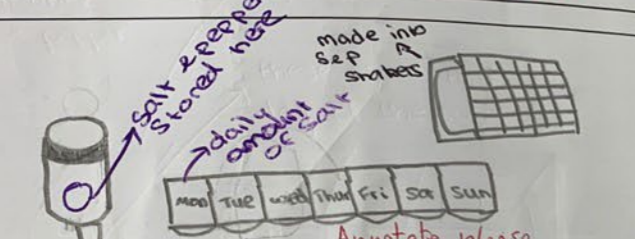

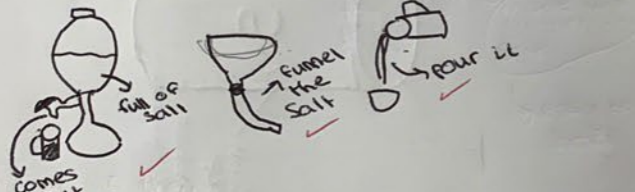

# LITERATURE REVIEW – THE SPIRIT OF MI

- I adapted this to reduce the amount of literacy / memory, "academic intelligences" needed

**DOT Design Development for Dexterity**

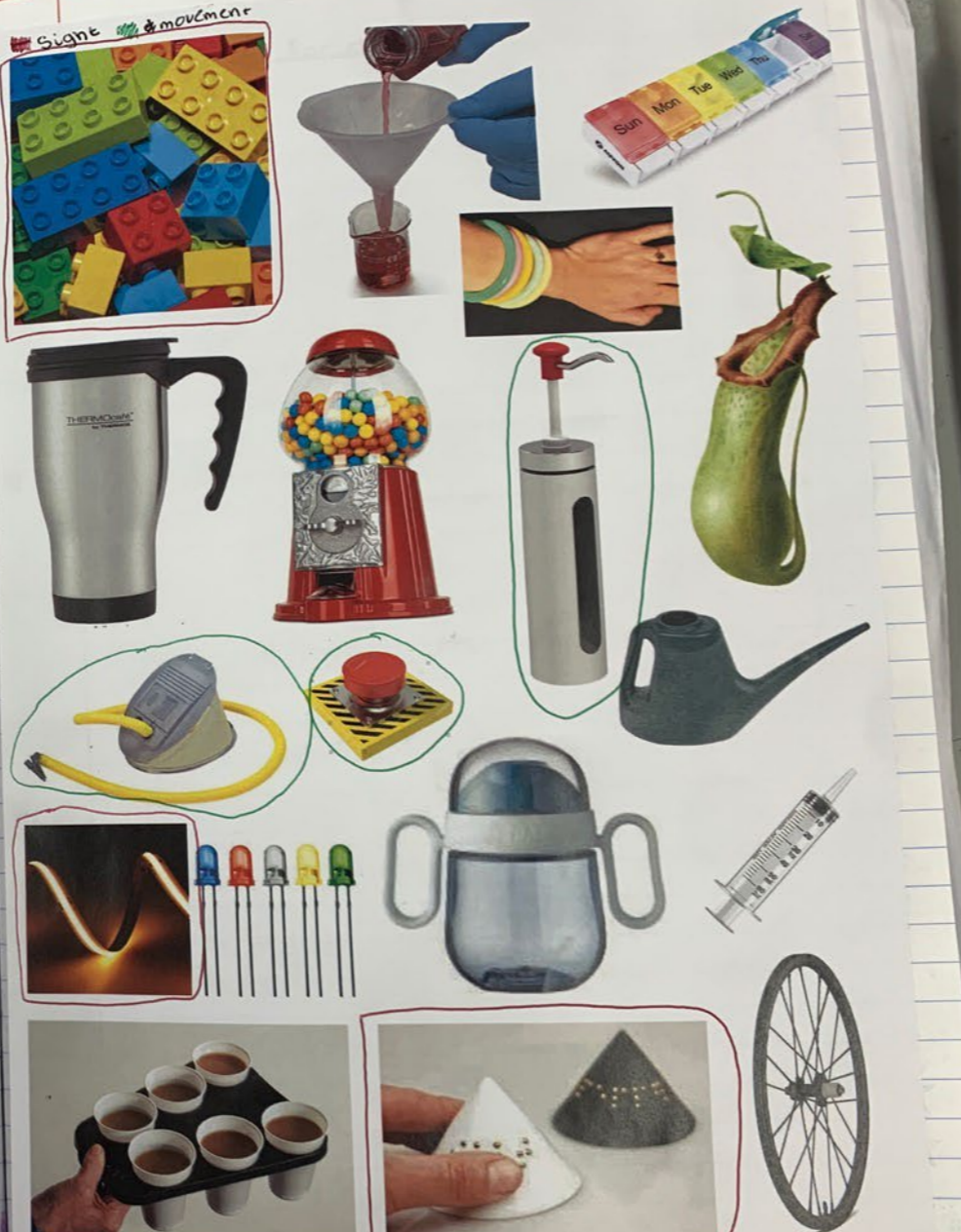
A "Design Brief" is...  
A document which give an overview of a creative project  
Project management tool ✓  
describes scope/scale/core details of project ✓

A "Design Specification" is...  
list of detailed criteria your product needs to address ✓  
Good!

|          |   |
|----------|---|
| STORE    |   |
| CARRY    |  |
| FILL     |  |
| DISPENSE |  |

- Some great ideas  
- Please annotate all and "carry" and "fill"


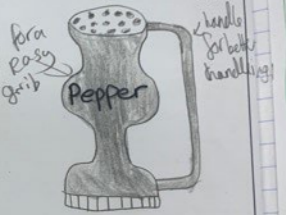
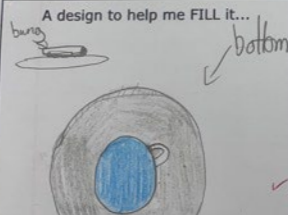

**Sight & movement**



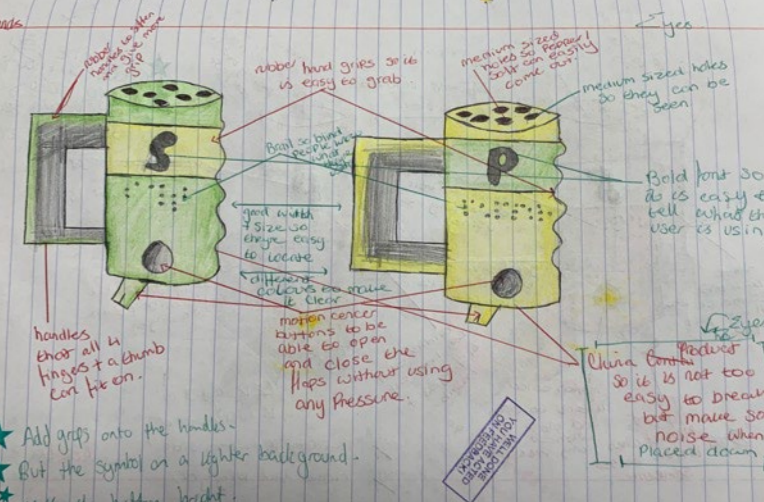
**DOT Design Development for Sight and Dexterity**

A "Design Brief" is... a document ~~that~~ will give an overview of a creative project. ✓

A "Design Specification" is... a list of detailed criteria your product needs to address using a brief as a starting point for research, a specification can be written when more facts are known ✓

|   |   |
|---|---|
| A design to help me SEE it...   | A design to help me CARRY it...   |
|   |   |
| A design to help me FILL it...  | A design to help me POUR it...  |
|  |  |

Very well developed ideas! You understood the brief and satisfied it. Can't fall to certain creativity!



★ Add grips onto the handles.  
★ Put the symbol on a lighter background.  
★ Make the button bright.

# METHODOLOGY

**Self-efficacy test + self-concept test at the start of the intervention.**

SoW promoting problem-solving,  
spatial thinking, collaboration  
+  
Verbal praise / persuasion of  
different intelligence types.

RPM tests in the first 10 minutes  
of every class  
+  
A leaderboard celebrating top  
"eductive" intelligence scores.

**Self-efficacy test + self-concept test at the end of the intervention + Interviews.**

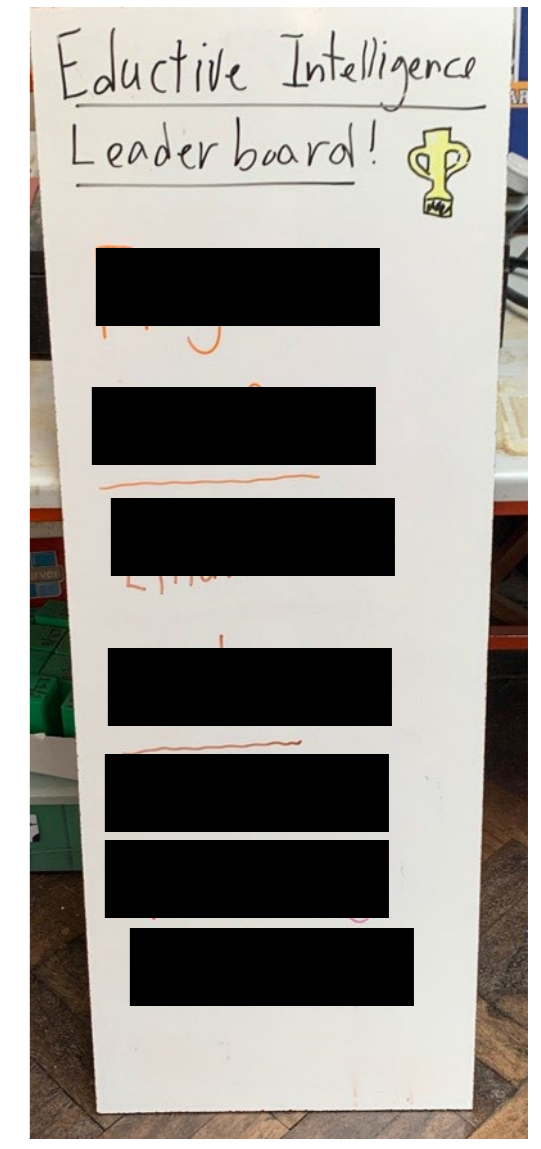
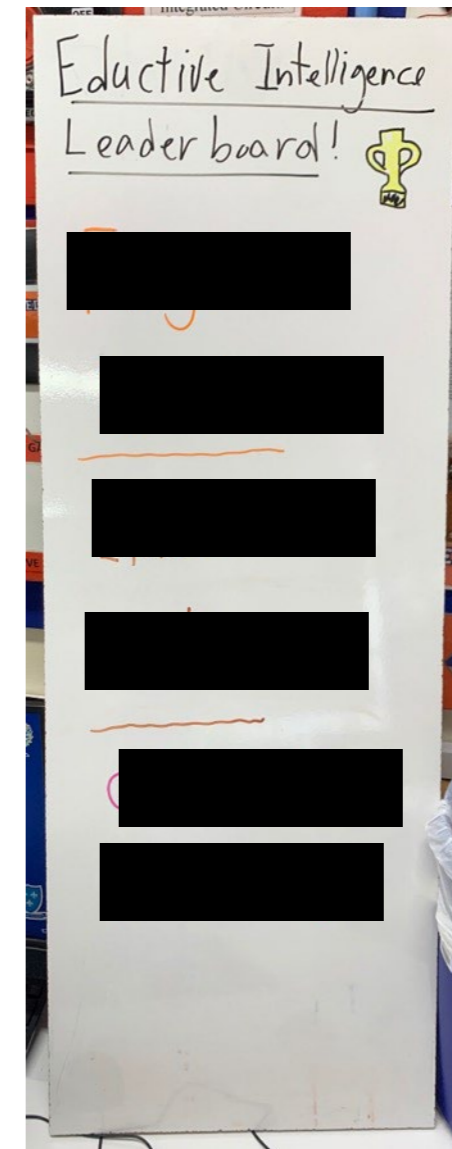
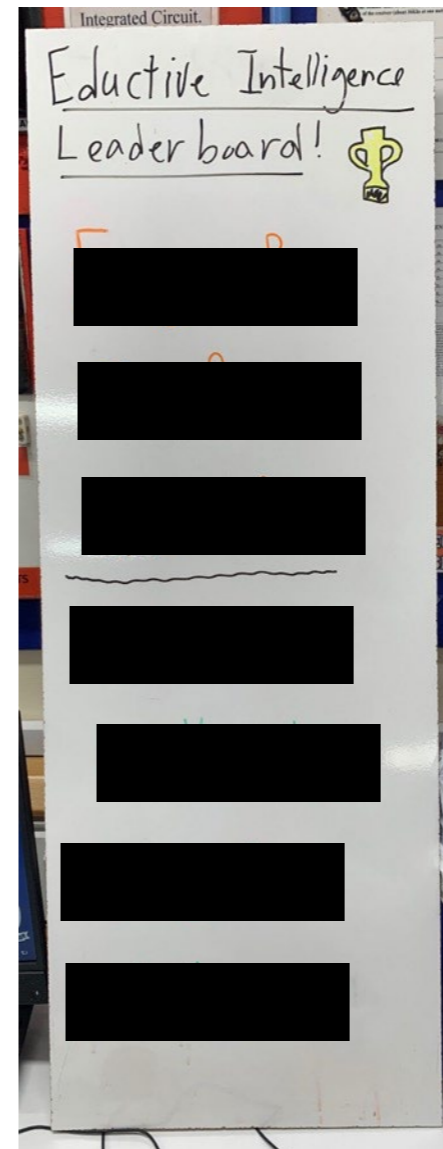
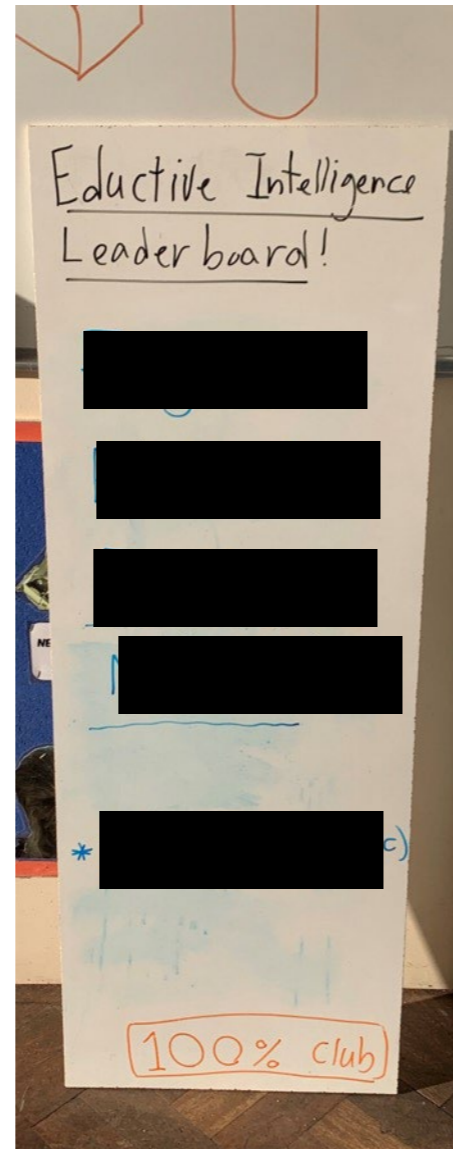
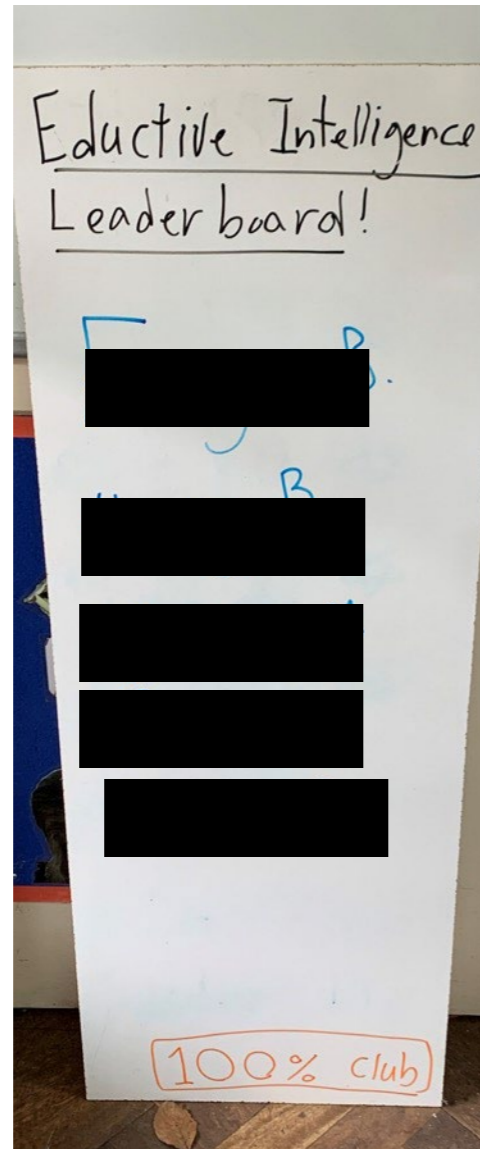
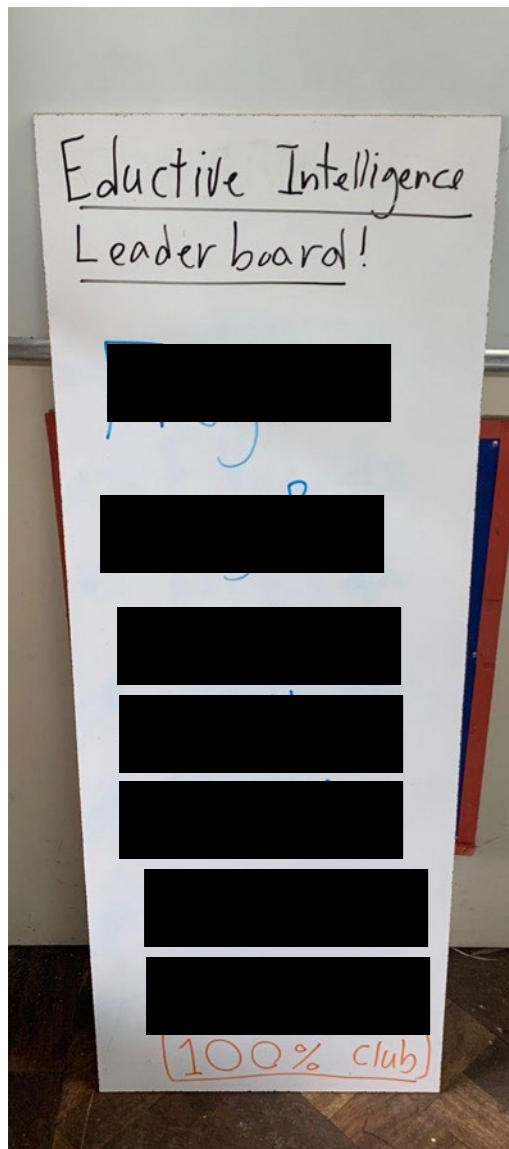
# SAMPLE

- 21 Year 8 students
- Mixed-ability D&T class at a rural Norfolk secondary school
- 11 male and 10 female students
- 2 were ethnically Black, 17 White British and 2 White European
- 2 EAL
- 10 SEND
- 6 Pupil Premium students

| Student    | SEND profile | EAL | Pupil Premium |
|------------|--------------|-----|---------------|
| Student 1  | No           | No  | Yes           |
| Student 2  | No           | No  | Yes           |
| Student 3  | No           | Yes | No            |
| Student 4  | Yes          | No  | No            |
| Student 5  | No           | No  | No            |
| Student 6  | No           | No  | No            |
| Student 7  | No           | No  | No            |
| Student 8  | No           | No  | No            |
| Student 9  | No           | No  | Yes           |
| Student 10 | Yes          | No  | No            |
| Student 11 | No           | No  | No            |
| Student 12 | Yes          | No  | No            |
| Student 13 | Yes          | No  | No            |
| Student 14 | Yes          | Yes | No            |
| Student 15 | Yes          | No  | Yes           |
| Student 16 | Yes          | No  | Yes           |
| Student 17 | Yes          | No  | No            |
| Student 18 | Yes          | No  | No            |
| Student 19 | Yes          | No  | No            |
| Student 20 | No           | No  | No            |
| Student 21 | No           | No  | Yes           |

# LOGGING LEADERBOARDS

| Leaderboard 1            | Leaderboard 2            | Leaderboard 3             | Leaderboard 4           | Leaderboard 5             | Leaderboard 6             | Leaderboard 7             |
|--------------------------|--------------------------|---------------------------|-------------------------|---------------------------|---------------------------|---------------------------|
| Student 4 (first place)  | Student 4 (first place)  | Student 4 (first place)   | Student 4 (first place) | Student 4 (second place)  | Student 4 (second place)  | Student 4 (second place)  |
| Student 5 (first place)  | Student 5 (first place)  | Student 5 (first place)   | Student 5 (first place) | Student 5 (first place)   | Student 5 (first place)   | Student 5 (first place)   |
| Student 9 (first place)  | Student 9 (first place)  | Student 9 (first place)   | Student 9 (first place) | Student 9 (first place)   | Student 9 (first place)   | Student 9 (first place)   |
| Student 10 (first place) | Student 10 (first place) |                           |                         |                           |                           |                           |
| Student 15 (first place) |                          |                           |                         | Student 15 (fourth place) |                           | Student 15 (fourth place) |
| Student 17 (first place) |                          |                           |                         |                           |                           |                           |
| Student 19 (first place) |                          |                           |                         |                           | Student 19 (third place)  | Student 19 (third place)  |
|                          | Student 3 (first place)  |                           |                         | Student 3 (fourth place)  |                           |                           |
|                          |                          | Student 18 (second place) |                         | Student 18 (fourth place) | Student 18 (third place)  | Student 18 (fourth place) |
|                          |                          |                           |                         | Student 12 (third place)  | Student 12 (second place) | Student 12 (second place) |



# FINDINGS



# SURVEY COMPARISONS – WHOLE CLASS

## Surveys Lesson 1

| HOW INTELLIGENT DO YOU NEED TO BE TO DO WELL IN THESE CORE SUBJECTS? (First survey)                      |              |      |         |           |         |      |             |       |      |      |      |         |  |                                   |
|--|--------------|------|---------|-----------|---------|------|-------------|-------|------|------|------|---------|--|-----------------------------------|
| Student  | Art & Design | D.T. | English | Geography | History | ICT  | Mathematics | Music | MFL  | P.E. | R.E. | Science |  |                                   |
| Danny Myslik   | 3            | 3    | 4       | 4         | 4       | 5    | 5           | 1     | 1    | 3    | 4    | 5       |  | Intelligence survey Lesson 1      |
| Eilidh McIntyre  | 3            | 3    | 4       | 4         | 3       | 5    | 5           | 4     | 1    | 2    | 2    | 5       |  | 1,2) Science / Mathematics 4.1    |
| Eva Potamitis  | 3            | 2    | 4       | 3         | 4       | 4    | 4           | 4     | 4    | 2    | 3    | 4       |  | 3) ICT 3.8                        |
| Freya Bailey   | 4            | 4    | 4       | 3         | 2       | 3    | 2           | 4     | 2    | 3    | 2    | 3       |  | 4) Art and Design 3.7             |
| Henry Betson   | 5            | 4    | 3       | 4         | 4       | 4    | 4           | 5     | 5    | 3    | 3    | 5       |  | 5) History 3.6                    |
| Isla Seal  | 4            | 2    | 3       | 2         | 3       | 5    | 5           | 4     | 5    | 1    | 3    | 4       |  | 6,7) English / Music 3.4          |
| Mailee Webb  | 3            | 2    | 4       | 3         | 4       | 4    | 3           | 4     | 2    | 5    | 1    | 3       |  | 8,9) DT / Geography 3.2           |
| Nate Haworth   | 5            | 4    | 2       | 3         | 5       | 1    | 3           | 2     | 1    | 5    | 2    | 3       |  | 10) P.E. 3.1                      |
| Nathaniel James  | 3            | 4    | 2       | 3         | 4       | 5    | 5           | 4     | 4    | 5    | 3    | 5       |  | 11) MFL 2.8                       |
| Oliver Hausden   | 4            | 4    | 4       | 3         | 3       | 2    | 5           | 2     | 3    | 2    | 2    | 4       |  | 12) R.E. 2.5                      |
| Total  | 37           | 32   | 34      | 32        | 36      | 38   | 41          | 34    | 28   | 31   | 25   | 41      |  |                                   |
| Average  | 3.70         | 3.20 | 3.40    | 3.20      | 3.60    | 3.80 | 4.10        | 3.40  | 2.80 | 3.10 | 2.50 | 4.10    |  |                                   |
| HOW CONFIDENT ARE YOU THAT YOU CAN DO THE HARDEST WORK THAT IS ASSIGNED IN YOUR SUBJECTS? (First survey) |              |      |         |           |         |      |             |       |      |      |      |         |  |                                   |
| Student  | Art & Design | D.T. | English | Geography | History | ICT  | Mathematics | Music | MFL  | P.E. | R.E. | Science |  |                                   |
| Danny Myslik   | 3            | 4    | 5       | 5         | 5       | 5    | 5           | 2     | 2    | 5    | 4    | 5       |  | Confidence survey Lesson 1        |
| Eilidh McIntyre  | 2            | 5    | 3       | 1         | 5       | 3    | 2           | 5     | 4    | 3    | 4    | 2       |  | 1) P.E. 4.2                       |
| Eva Potamitis  | 4            | 3    | 2       | 4         | 3       | 2    | 1           | 5     | 3    | 4    | 4    | 1       |  | 2,3) DT / History 3.9             |
| Freya Bailey   | 4            | 4    | 3       | 2         | 4       | 4    | 1           | 3     | 2    | 4    | 2    | 2       |  | 4) ICT 3.7                        |
| Henry Betson   | 1            | 4    | 3       | 5         | 5       | 3    | 4           | 2     | 3    | 5    | 3    | 5       |  | 5,6,7) Science / Maths / Engl 3.4 |
| Isla Seal  | 4            | 2    | 3       | 2         | 3       | 5    | 5           | 4     | 5    | 1    | 3    | 4       |  | 8) Music 3.3                      |
| Mailee Webb  | 3            | 4    | 4       | 2         | 3       | 4    | 3           | 5     | 1    | 5    | 2    | 3       |  | 9) Art and Design 3.2             |
| Nate Haworth   | 4            | 5    | 3       | 3         | 4       | 3    | 3           | 3     | 1    | 5    | 2    | 3       |  | 10) Geography 3.1                 |
| Nathaniel James  | 5            | 5    | 4       | 3         | 4       | 5    | 5           | 3     | 2    | 5    | 2    | 5       |  | 8) R.E. 2.9                       |
| Oliver Hausden   | 2            | 3    | 4       | 4         | 3       | 3    | 5           | 1     | 3    | 5    | 3    | 4       |  | 9) MFL 2.6                        |
| Total  | 32           | 39   | 34      | 31        | 39      | 37   | 34          | 33    | 26   | 42   | 29   | 34      |  |                                   |
| Average  | 3.20         | 3.90 | 3.40    | 3.10      | 3.90    | 3.70 | 3.40        | 3.30  | 2.60 | 4.20 | 2.90 | 3.40    |  |                                   |

## Surveys Lesson 9

| HOW INTELLIGENT DO YOU NEED TO BE TO DO WELL IN THESE CORE SUBJECTS? (second survey)                      |              |      |         |           |         |      |             |       |      |      |      |         |  |                                   |
|---|--------------|------|---------|-----------|---------|------|-------------|-------|------|------|------|---------|--|-----------------------------------|
| Student   | Art & Design | D.T. | English | Geography | History | ICT  | Mathematics | Music | MFL  | P.E. | R.E. | Science |  |                                   |
| Danny Myslik  | 3            | 4    | 4       | 5         | 5       | 4    | 5           | 3     | 3    | 4    | 3    | 5       |  | Intelligence survey Lesson 9      |
| Eilidh McIntyre   | 5            | 4    | 3       | 1         | 5       | 3    | 2           | 5     | 3    | 4    | 5    | 4       |  | 1) Science 4.1                    |
| Eva Potamitis   | 4            | 3    | 4       | 2         | 2       | 5    | 4           | 4     | 5    | 1    | 2    | 5       |  | 2) ICT 4                          |
| Freya Bailey  | 4            | 4    | 4       | 2         | 4       | 3    | 2           | 3     | 2    | 2    | 3    | 2       |  | 3) Mathematics 3.9                |
| Henry Betson  | 4            | 4    | 4       | 4         | 4       | 4    | 4           | 4     | 4    | 4    | 4    | 4       |  | 4,5,6) History / English / DT 3.8 |
| Isla Seal   | 3            | 3    | 4       | 2         | 4       | 5    | 5           | 4     | 5    | 1    | 3    | 4       |  | 7) Art and Design 3.6             |
| Mailee Webb   | 3            | 4    | 3       | 3         | 3       | 4    | 4           | 3     | 3    | 4    | 2    | 4       |  | 8,9) Music / MFL 3.4              |
| Nate Haworth  | 4            | 4    | 2       | 3         | 3       | 3    | 3           | 2     | 1    | 4    | 3    | 3       |  | 10) P.E. 3.3                      |
| Nathaniel James   | 3            | 4    | 5       | 4         | 4       | 5    | 5           | 4     | 4    | 4    | 3    | 5       |  | 11) R.E. 3.2                      |
| Oliver Hausden  | 3            | 4    | 5       | 4         | 4       | 4    | 5           | 2     | 4    | 5    | 4    | 5       |  | 12) Geography 3                   |
| Total   | 36           | 38   | 38      | 30        | 38      | 40   | 39          | 34    | 34   | 33   | 32   | 41      |  |                                   |
| Average   | 3.60         | 3.80 | 3.80    | 3.00      | 3.80    | 4.00 | 3.90        | 3.40  | 3.40 | 3.30 | 3.20 | 4.10    |  |                                   |
| HOW CONFIDENT ARE YOU THAT YOU CAN DO THE HARDEST WORK THAT IS ASSIGNED IN YOUR SUBJECTS? (second survey) |              |      |         |           |         |      |             |       |      |      |      |         |  |                                   |
| Student   | Art & Design | D.T. | English | Geography | History | ICT  | Mathematics | Music | MFL  | P.E. | R.E. | Science |  |                                   |
| Danny Myslik  | 4            | 4    | 5       | 5         | 5       | 4    | 5           | 3     | 4    | 5    | 4    | 5       |  | Confidence survey Lesson 9        |
| Eilidh McIntyre   | 5            | 3    | 1       | 1         | 5       | 4    | 3           | 5     | 1    | 5    | 5    | 2       |  | 1) History 4.2                    |
| Eva Potamitis   | 4            | 4    | 3       | 3         | 4       | 1    | 1           | 5     | 2    | 2    | 4    | 2       |  | 2) P.E. 3.9                       |
| Freya Bailey  | 4            | 4    | 4       | 2         | 4       | 5    | 2           | 3     | 2    | 3    | 2    | 2       |  | 3) DT 3.8                         |
| Henry Betson  | 1            | 3    | 2       | 4         | 5       | 3    | 3           | 2     | 2    | 5    | 3    | 5       |  | 4,5) Science / Art 3.6            |
| Isla Seal   | 5            | 4    | 3       | 1         | 5       | 4    | 3           | 5     | 4    | 1    | 2    | 5       |  | 6,7) ICT / Music 3.5              |
| Mailee Webb   | 3            | 4    | 3       | 2         | 3       | 3    | 4           | 4     | 2    | 5    | 3    | 3       |  | 8) Mathematics 3.3                |
| Nate Haworth  | 3            | 3    | 2       | 3         | 3       | 2    | 2           | 2     | 2    | 3    | 2    | 2       |  | 9,10) English / R.E. 3.2          |
| Nathaniel James   | 3            | 4    | 4       | 3         | 4       | 5    | 5           | 3     | 2    | 5    | 3    | 5       |  | 11) Geography 2.9                 |
| Oliver Hausden  | 4            | 5    | 5       | 5         | 4       | 4    | 5           | 3     | 4    | 5    | 4    | 5       |  | 12) MFL 2.5                       |
| Total   | 36           | 38   | 32      | 29        | 42      | 35   | 33          | 35    | 25   | 39   | 32   | 36      |  |                                   |
| Average   | 3.60         | 3.80 | 3.20    | 2.90      | 4.20    | 3.50 | 3.30        | 3.50  | 2.50 | 3.90 | 3.20 | 3.60    |  |                                   |

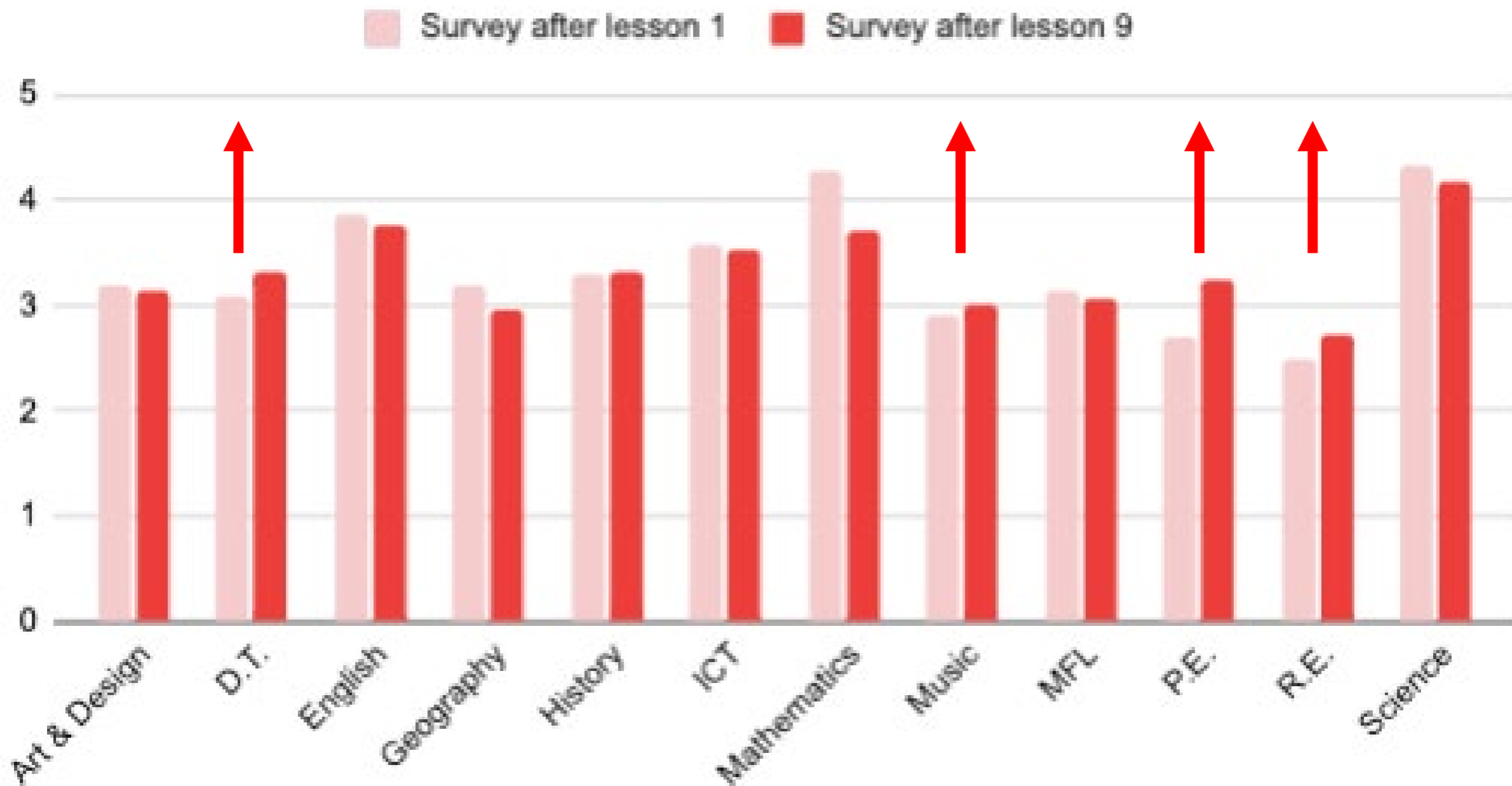
# SURVEY COMPARISONS

- From the pre-intervention survey to the post-intervention survey the students have identified D&T as requiring more intelligence, rising from 3.1 to 3.33.
- Compared to other subjects, D&T went from 8<sup>th</sup> place to 5<sup>th</sup> overtaking history, art, geography and MFL

| Intelligence survey Lesson 1 |      | Intelligence survey Lesson 9 |      |
|------------------------------|------|------------------------------|------|
| 1) Science                   | 4.33 | 1) Science                   | 4.19 |
| 2) Mathematics               | 4.29 | 2) English                   | 3.76 |
| 3) English                   | 3.86 | 3) Mathematics               | 3.71 |
| 4) ICT                       | 3.57 | 4) ICT                       | 3.52 |
| 5) History                   | 3.29 | 5) DT                        | 3.33 |
| 6) Art / Geograph            | 3.19 | 6) History                   | 3.31 |
| 7) MFL                       | 3.14 | 7) P.E.                      | 3.24 |
| 8) DT                        | 3.1  | 8) Art & Design              | 3.14 |
| 9) Music                     | 2.9  | 9) MFL                       | 3.05 |
| 10) P.E.                     | 2.71 | 10) Music                    | 3    |
| 11) R.E.                     | 2.48 | 11) Geography                | 2.95 |
|                              |      | 12) R.E.                     | 2.73 |

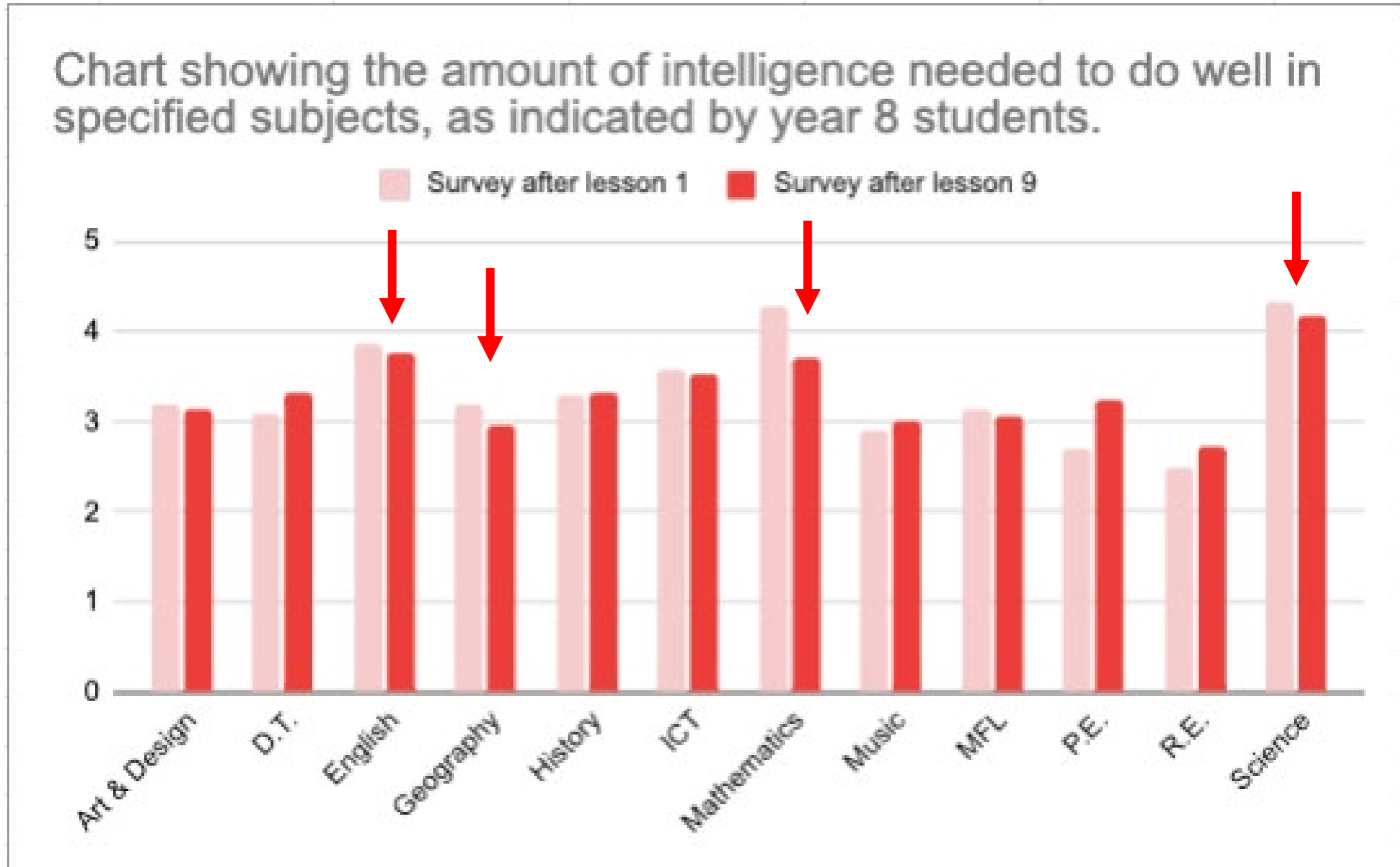
# SURVEY COMPARISONS

Chart showing the amount of intelligence needed to do well in specified subjects, as indicated by year 8 students.



# SURVEY COMPARISONS

- Science, mathematics, English and ICT remained the top 4, but with a decreased lead



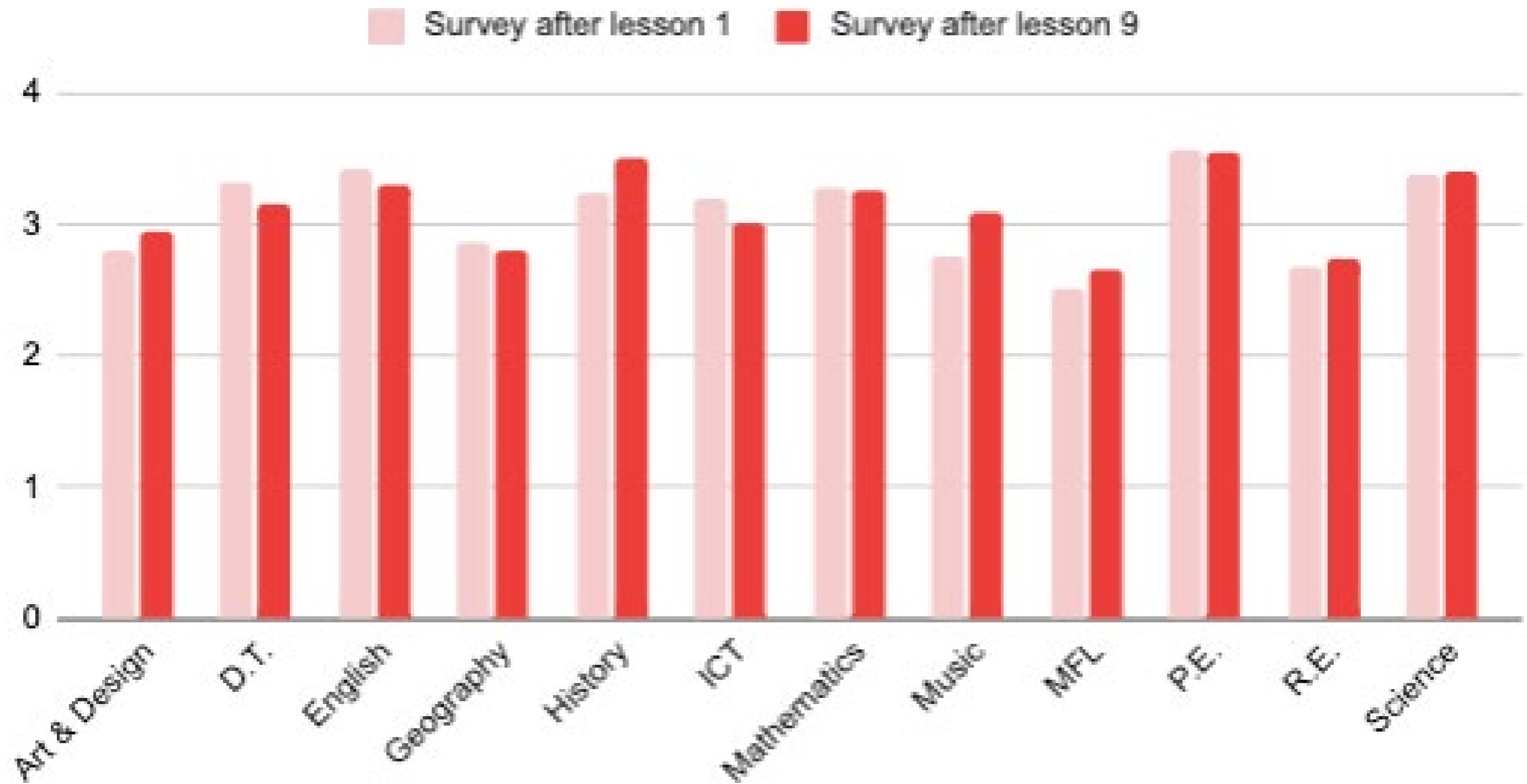
# SURVEY COMPARISONS

- However, the students identified themselves as less confident in D&T, dropping from 3.33 to 3.15, and from joint 4<sup>nd</sup> place to 6<sup>th</sup> place

| Confidence survey Lesson 1 |      | Confidence survey Lesson 9 |      |
|----------------------------|------|----------------------------|------|
| 1) P.E.                    | 3.57 | 1) P.E.                    | 3.55 |
| 2) English                 | 3.43 | 2) History                 | 3.5  |
| 3) Science                 | 3.38 | 3) Science                 | 3.4  |
| 4) DT                      | 3.33 | 4) English                 | 3.3  |
| 5) Mathematics             | 3.29 | 5) Mathematics             | 3.25 |
| 6) History                 | 3.24 | 6) DT                      | 3.15 |
| 7) ICT                     | 3.19 | 7) Music                   | 3.1  |
| 8) Geography               | 2.86 | 8) ICT                     | 3    |
| 9) Art and Design          | 2.81 | 9) Art and Design          | 2.95 |
| 10) Music                  | 2.76 | 10) Geography              | 2.8  |
| 11) R.E.                   | 2.67 | 11) R.E.                   | 2.75 |
| 12) MFL                    | 2.52 | 12) MFL                    | 2.65 |

# SURVEY COMPARISONS

Chart showing the amount of confidence that year 8 students have in doing the hardest work set in specified subjects.



# HOWEVER...

| HOW INTELLIGENT DO YOU NEED TO BE TO DO WELL IN THESE CORE SUBJECTS? (First survey) |              |      |         |           |         |      |             |       |      |      |      |         |
|---|--------------|------|---------|-----------|---------|------|-------------|-------|------|------|------|---------|
| Student   | Art & Design | D.T. | English | Geography | History | ICT  | Mathematics | Music | MFL  | P.E. | R.E. | Science |
| Student 3   | 3            | 3    | 4       | 4         | 4       | 5    | 5           | 1     | 1    | 3    | 4    | 5       |
| Student 4   | 3            | 3    | 4       | 4         | 3       | 5    | 5           | 4     | 1    | 2    | 2    | 5       |
| Student 5   | 3            | 2    | 4       | 3         | 4       | 4    | 4           | 4     | 4    | 2    | 3    | 4       |
| Student 9   | 4            | 4    | 4       | 3         | 2       | 3    | 2           | 4     | 2    | 3    | 2    | 3       |
| Student 10  | 5            | 4    | 3       | 4         | 4       | 4    | 4           | 5     | 5    | 3    | 3    | 5       |
| Student 12  | 4            | 2    | 3       | 2         | 3       | 5    | 5           | 4     | 5    | 1    | 3    | 4       |
| Student 15  | 3            | 2    | 4       | 3         | 4       | 4    | 3           | 4     | 2    | 5    | 1    | 3       |
| Student 17  | 5            | 4    | 2       | 3         | 5       | 1    | 3           | 2     | 1    | 5    | 2    | 3       |
| Student 18  | 3            | 4    | 2       | 3         | 4       | 5    | 5           | 4     | 4    | 5    | 3    | 5       |
| Student 19  | 4            | 4    | 4       | 3         | 3       | 2    | 5           | 2     | 3    | 2    | 2    | 4       |
| Total   | 37           | 32   | 34      | 32        | 36      | 38   | 41          | 34    | 28   | 31   | 25   | 41      |
| Average   | 3.70         | 3.20 | 3.40    | 3.20      | 3.60    | 3.80 | 4.10        | 3.40  | 2.80 | 3.10 | 2.50 | 4.10    |

| Intelligence survey Lesson 1 |     |
|------------------------------|-----|
| 1.2) Science / Mathematics   | 4.1 |
| 3) ICT                       | 3.8 |
| 4) Art and Design            | 3.7 |
| 5) History                   | 3.6 |
| 6.7) English / Music         | 3.4 |
| 8.9) DT / Geography          | 3.2 |
| 10) P.E.                     | 3.1 |
| 11) MFL                      | 2.8 |
| 12) R.E.                     | 2.5 |

| ONLY FINAL LEADERBOARD  |              |      |         |           |         |      |             |       |      |      |      |         |
|---|--------------|------|---------|-----------|---------|------|-------------|-------|------|------|------|---------|
| HOW INTELLIGENT DO YOU NEED TO BE TO DO WELL IN THESE CORE SUBJECTS? (First survey) |              |      |         |           |         |      |             |       |      |      |      |         |
| Student   | Art & Design | D.T. | English | Geography | History | ICT  | Mathematics | Music | MFL  | P.E. | R.E. | Science |
| Student 4   | 3            | 3    | 4       | 4         | 3       | 5    | 5           | 4     | 1    | 2    | 2    | 5       |
| Student 5   | 3            | 2    | 4       | 3         | 4       | 4    | 4           | 4     | 4    | 2    | 3    | 4       |
| Student 9   | 4            | 4    | 4       | 3         | 2       | 3    | 2           | 4     | 2    | 3    | 2    | 3       |
| Student 12  | 4            | 2    | 3       | 2         | 3       | 5    | 5           | 4     | 5    | 1    | 3    | 4       |
| Student 15  | 3            | 2    | 4       | 3         | 4       | 4    | 3           | 4     | 2    | 5    | 1    | 3       |
| Student 18  | 3            | 4    | 2       | 3         | 4       | 5    | 5           | 4     | 4    | 5    | 3    | 5       |
| Student 19  | 4            | 4    | 4       | 3         | 3       | 2    | 5           | 2     | 3    | 2    | 2    | 4       |
| Total   | 24           | 21   | 25      | 21        | 23      | 28   | 29          | 26    | 21   | 20   | 16   | 28      |
| Average   | 3.43         | 3.00 | 3.57    | 3.00      | 3.29    | 4.00 | 4.14        | 3.71  | 3.00 | 2.86 | 2.29 | 4.00    |

| Intelligence survey Lesson 1 |      |
|------------------------------|------|
| 1) Mathematics               | 4.14 |
| 2.3) ICT / Science           | 4    |
| 4) Music                     | 3.71 |
| 5) English                   | 3.57 |
| 6) Art and Design            | 3.43 |
| 7) History                   | 3.29 |
| 8.9.10) DT / Geography / MFL | 3    |
| 11) P.E.                     | 2.86 |
| 12) R.E.                     | 2.29 |

| HOW CONFIDENT ARE YOU THAT YOU CAN DO THE HARDEST WORK THAT IS ASSIGNED IN YOUR SUBJECTS? (First survey) |              |      |         |           |         |      |             |       |      |      |      |         |
|--|--------------|------|---------|-----------|---------|------|-------------|-------|------|------|------|---------|
| Student  | Art & Design | D.T. | English | Geography | History | ICT  | Mathematics | Music | MFL  | P.E. | R.E. | Science |
| Student 3  | 3            | 4    | 5       | 5         | 5       | 5    | 5           | 2     | 2    | 5    | 4    | 5       |
| Student 4  | 2            | 5    | 3       | 1         | 5       | 3    | 2           | 5     | 4    | 3    | 4    | 2       |
| Student 5  | 4            | 3    | 2       | 4         | 3       | 2    | 1           | 5     | 3    | 4    | 4    | 1       |
| Student 9  | 4            | 4    | 3       | 2         | 4       | 4    | 1           | 3     | 2    | 4    | 2    | 2       |
| Student 10   | 1            | 4    | 3       | 5         | 5       | 3    | 4           | 2     | 3    | 5    | 3    | 5       |
| Student 12   | 4            | 2    | 3       | 2         | 3       | 5    | 5           | 4     | 5    | 1    | 3    | 4       |
| Student 15   | 3            | 4    | 4       | 2         | 3       | 4    | 3           | 5     | 1    | 5    | 2    | 3       |
| Student 17   | 4            | 5    | 3       | 3         | 4       | 3    | 3           | 3     | 1    | 5    | 2    | 3       |
| Student 18   | 5            | 5    | 4       | 3         | 4       | 5    | 5           | 3     | 2    | 5    | 2    | 5       |
| Student 19   | 2            | 3    | 4       | 4         | 3       | 3    | 5           | 1     | 3    | 5    | 3    | 4       |
| Total  | 32           | 39   | 34      | 31        | 39      | 37   | 34          | 33    | 26   | 42   | 29   | 34      |
| Average  | 3.20         | 3.90 | 3.40    | 3.10      | 3.90    | 3.70 | 3.40        | 3.30  | 2.60 | 4.20 | 2.90 | 3.40    |

| Confidence survey Lesson 1       |     |
|----------------------------------|-----|
| 1) P.E.                          | 4.2 |
| 2.3) DT / History                | 3.9 |
| 4) ICT                           | 3.7 |
| 5.6.7) Science / Maths / English | 3.4 |
| 8) Music                         | 3.3 |
| 9) Art and Design                | 3.2 |
| 10) Geography                    | 3.1 |
| 8) R.E.                          | 2.9 |
| 9) MFL                           | 2.6 |

| HOW CONFIDENT ARE YOU THAT YOU CAN DO THE HARDEST WORK THAT IS ASSIGNED IN YOUR SUBJECTS? (First survey) |              |      |         |           |         |      |             |       |      |      |      |         |
|--|--------------|------|---------|-----------|---------|------|-------------|-------|------|------|------|---------|
| Student  | Art & Design | D.T. | English | Geography | History | ICT  | Mathematics | Music | MFL  | P.E. | R.E. | Science |
| Student 4  | 2            | 5    | 3       | 1         | 5       | 3    | 2           | 5     | 4    | 3    | 4    | 2       |
| Student 5  | 4            | 3    | 2       | 4         | 3       | 2    | 1           | 5     | 3    | 4    | 4    | 1       |
| Student 9  | 4            | 4    | 3       | 2         | 4       | 4    | 1           | 3     | 2    | 4    | 2    | 2       |
| Student 12   | 4            | 2    | 3       | 2         | 3       | 5    | 5           | 4     | 5    | 1    | 3    | 4       |
| Student 15   | 3            | 4    | 4       | 2         | 3       | 4    | 3           | 5     | 1    | 5    | 2    | 3       |
| Student 18   | 5            | 5    | 4       | 3         | 4       | 5    | 5           | 3     | 2    | 5    | 2    | 5       |
| Student 19   | 2            | 3    | 4       | 4         | 3       | 3    | 5           | 1     | 3    | 5    | 3    | 4       |
| Total  | 24           | 26   | 23      | 18        | 25      | 26   | 22          | 26    | 20   | 27   | 20   | 21      |
| Average  | 3.43         | 3.71 | 3.29    | 2.57      | 3.57    | 3.71 | 3.14        | 3.71  | 2.86 | 3.86 | 2.86 | 3.00    |

| Confidence survey Lesson 1 |      |
|----------------------------|------|
| 1) P.E.                    | 3.86 |
| 2.3.4) DT / ICT / Music    | 3.71 |
| 5) History                 | 3.57 |
| 6) Art and Design          | 3.43 |
| 7) English                 | 3.29 |
| 8) Maths                   | 3.14 |
| 9) Science                 | 3    |
| 10.11) R.E. / MFL          | 2.86 |
| 12) Geography              | 2.57 |

| HOW INTELLIGENT DO YOU NEED TO BE TO DO WELL IN THESE CORE SUBJECTS? (second survey) |              |      |         |           |         |      |             |       |      |      |      |         |
|--|--------------|------|---------|-----------|---------|------|-------------|-------|------|------|------|---------|
| Student  | Art & Design | D.T. | English | Geography | History | ICT  | Mathematics | Music | MFL  | P.E. | R.E. | Science |
| Student 3  | 3            | 4    | 4       | 5         | 5       | 4    | 5           | 3     | 3    | 4    | 3    | 5       |
| Student 4  | 5            | 4    | 3       | 1         | 5       | 3    | 2           | 5     | 3    | 4    | 5    | 4       |
| Student 5  | 4            | 3    | 4       | 2         | 2       | 5    | 4           | 4     | 5    | 1    | 2    | 5       |
| Student 9  | 4            | 4    | 4       | 2         | 4       | 3    | 2           | 3     | 2    | 2    | 3    | 2       |
| Student 10   | 4            | 4    | 4       | 4         | 4       | 4    | 4           | 4     | 4    | 4    | 4    | 4       |
| Student 12   | 3            | 3    | 4       | 2         | 4       | 5    | 5           | 4     | 5    | 1    | 3    | 4       |
| Student 15   | 3            | 4    | 3       | 3         | 3       | 4    | 4           | 3     | 3    | 4    | 2    | 4       |
| Student 17   | 4            | 4    | 2       | 3         | 3       | 3    | 3           | 2     | 1    | 4    | 3    | 3       |
| Student 18   | 3            | 4    | 5       | 4         | 4       | 5    | 5           | 4     | 4    | 4    | 3    | 5       |
| Student 19   | 3            | 4    | 5       | 4         | 4       | 4    | 5           | 2     | 4    | 5    | 4    | 5       |
| Total  | 36           | 38   | 38      | 30        | 38      | 40   | 39          | 34    | 34   | 33   | 32   | 41      |
| Average  | 3.60         | 3.80 | 3.80    | 3.00      | 3.80    | 4.00 | 3.90        | 3.40  | 3.40 | 3.30 | 3.20 | 4.10    |

| Intelligence survey Lesson 9  |     |
|-------------------------------|-----|
| 1) Science                    | 4.1 |
| 2) ICT                        | 4   |
| 3) Mathematics                | 3.9 |
| 4.5.6) History / English / DT | 3.8 |
| 7) Art and Design             | 3.6 |
| 8.9) Music / MFL              | 3.4 |
| 10) P.E.                      | 3.3 |
| 11) R.E.                      | 3.2 |
| 12) Geography                 | 3   |

| HOW INTELLIGENT DO YOU NEED TO BE TO DO WELL IN THESE CORE SUBJECTS? (second survey) |              |      |         |           |         |      |             |       |      |      |      |         |
|--|--------------|------|---------|-----------|---------|------|-------------|-------|------|------|------|---------|
| Student  | Art & Design | D.T. | English | Geography | History | ICT  | Mathematics | Music | MFL  | P.E. | R.E. | Science |
| Student 4  | 5            | 4    | 3       | 1         | 5       | 3    | 2           | 5     | 3    | 4    | 5    | 4       |
| Student 5  | 4            | 3    | 4       | 2         | 2       | 5    | 4           | 4     | 5    | 1    | 2    | 5       |
| Student 9  | 4            | 4    | 4       | 2         | 4       | 3    | 2           | 3     | 2    | 2    | 3    | 2       |
| Student 12   | 3            | 3    | 4       | 2         | 4       | 5    | 5           | 4     | 5    | 1    | 3    | 4       |
| Student 15   | 3            | 4    | 3       | 3         | 3       | 4    | 4           | 3     | 3    | 4    | 2    | 4       |
| Student 18   | 3            | 4    | 5       | 4         | 4       | 5    | 5           | 4     | 4    | 4    | 3    | 5       |
| Student 19   | 3            | 4    | 5       | 4         | 4       | 4    | 5           | 2     | 4    | 5    | 4    | 5       |
| Total  | 25           | 26   | 28      | 18        | 26      | 29   | 27          | 25    | 26   | 21   | 22   | 29      |
| Average  | 3.57         | 3.71 | 4.00    | 2.57      | 3.71    | 4.14 | 3.86        | 3.57  | 3.71 | 3.00 | 3.14 | 4.14    |

| Intelligence survey Lesson 9 |      |
|------------------------------|------|
| 1.2) Science / ICT           | 4.14 |
| 3) English                   | 4    |
| 4) Mathematics               | 3.86 |
| 5.6.7) DT / History / MFL    | 3.71 |
| 8.9) Art and Design / Music  | 3.57 |
| 10) R.E.                     | 3.14 |
| 11) P.E.                     | 3    |
| 12) Geography                | 2.57 |

| HOW CONFIDENT ARE YOU THAT YOU CAN DO THE HARDEST WORK THAT IS ASSIGNED IN YOUR SUBJECTS? (second survey) |              |      |         |           |         |      |             |       |      |      |      |         |
|---|--------------|------|---------|-----------|---------|------|-------------|-------|------|------|------|---------|
| Student   | Art & Design | D.T. | English | Geography | History | ICT  | Mathematics | Music | MFL  | P.E. | R.E. | Science |
| Student 3   | 4            | 4    | 5       | 5         | 5       | 4    | 5           | 3     | 4    | 5    | 4    | 5       |
| Student 4   | 5            | 3    | 1       | 1         | 5       | 4    | 3           | 5     | 1    | 5    | 5    | 2       |
| Student 5   | 4            | 4    | 3       | 3         | 4       | 1    | 1           | 5     | 2    | 2    | 4    | 2       |
| Student 9   | 4            | 4    | 4       | 2         | 4       | 5    | 2           | 3     | 2    | 3    | 2    | 2       |
| Student 10  | 1            | 3    | 2       | 4         | 5       | 3    | 3           | 2     | 2    | 5    | 3    | 5       |
| Student 12  | 5            | 4    | 3       | 1         | 5       | 4    | 3           | 5     | 4    | 1    | 2    | 5       |
| Student 15  | 3            | 4    | 3       | 2         | 3       | 3    | 4           | 4     | 2    | 5    | 3    | 3       |
| Student 17  | 3            | 3    | 2       | 3         | 3       | 2    | 2           | 2     | 2    | 3    | 2    | 2       |
| Student 18  | 3            | 4    | 4       | 3         | 4       | 5    | 5           | 3     | 2    | 5    | 3    | 5       |
| Student 19  | 4            | 5    | 5       | 5         | 4       | 4    | 5           | 3     | 4    | 5    | 4    | 5       |
| Total   | 36           | 38   | 32      | 29        | 42      | 35   | 33          | 35    | 25   | 39   | 32   | 36      |
| Average   | 3.60         | 3.80 | 3.20    | 2.90      | 4.20    | 3.50 | 3.30        | 3.50  | 2.50 | 3.90 | 3.20 | 3.60    |

| Confidence survey Lesson 9 |     |
|----------------------------|-----|
| 1) History                 | 4.2 |
| 2) P.E.                    | 3.9 |
| 3) DT                      | 3.8 |
| 4.5) Science / Art         | 3.6 |
| 6.7) ICT / Music           | 3.5 |
| 8) Mathematics             | 3.3 |
| 9.10) English / R.E.       | 3.2 |
| 11) Geography              | 2.9 |
| 12) MFL                    | 2.5 |

| HOW CONFIDENT ARE YOU THAT YOU CAN DO THE HARDEST WORK THAT IS ASSIGNED IN YOUR SUBJECTS? (second survey) |              |      |         |           |         |      |             |       |      |      |      |         |
|---|--------------|------|---------|-----------|---------|------|-------------|-------|------|------|------|---------|
| Student   | Art & Design | D.T. | English | Geography | History | ICT  | Mathematics | Music | MFL  | P.E. | R.E. | Science |
| Student 4   | 5            | 3    | 1       | 1         | 5       | 4    | 3           | 5     | 1    | 5    | 5    | 2       |
| Student 5   | 4            | 4    | 3       | 3         | 4       | 1    | 1           | 5     | 2    | 2    | 4    | 2       |
| Student 9   | 4            | 4    | 4       | 2         | 4       | 5    | 2           | 3     | 2    | 3    | 2    | 2       |
| Student 12  | 5            | 4    | 3       | 1         | 5       | 4    | 3           | 5     | 4    | 1    | 2    | 5       |
| Student 15  | 3            | 4    | 3       | 2         | 3       | 3    | 4           | 4     | 2    | 5    | 3    | 3       |
| Student 18  | 3            | 4    | 4       | 3         | 4       | 5    | 5           | 3     | 2    | 5    | 3    | 5       |
| Student 19  | 4            | 5    | 5       | 5         | 4       | 4    | 5           | 3     | 4    | 5    | 4    | 5       |
| Total   | 28           | 28   | 23      | 17        | 29      | 26   | 23          | 28    | 17   | 26   | 23   | 24      |
| Average   | 4.00         | 4.00 | 3.29    | 2.43      | 4.14    | 3.71 | 3.29        | 4.00  | 2.43 | 3.71 | 3.29 | 3.43    |

| Confidence survey Lesson 9     |      |
|--------------------------------|------|
| 1) History                     | 4.14 |
| 2.3.4) Art / DT / Music        | 4    |
| 5.6) P.E. / ICT                | 3.71 |
| 7) Science                     | 3.43 |
| 8.9.10) English / Maths / R.E. | 3.29 |
| 11.12) MFL / Geography         | 2.43 |

- I also compared the results from those had entered the leaderboard at least once, and for those on the final leaderboard.

# SURVEY COMPARISONS – FINAL LEADERBOARD 7

- From the pre-intervention survey to the post-intervention survey the students have identified DT as requiring more intelligence, rising from 3 to 3.71, and from joint 7<sup>th</sup> place to joint 4<sup>th</sup> – on a par with History and MFL. It has remained on par with MFL, joined now by history, and has overtaken Geography, Music and History.
- The students identified themselves as more confident in the subject, rising from 3 to 4. Interestingly, the top subjects have rearranged, with P.E. dropping from 1<sup>st</sup> place to joint 3<sup>rd</sup>, History rising from 3<sup>rd</sup> to 1<sup>st</sup>, and DT and Music remaining in joint 2<sup>nd</sup>, joined now by ART instead of ICT.

| ONLY FINAL LEADERBOARD   |              |      |         |           |         |      |             |       |      |      |      |         |                                |
|--|--------------|------|---------|-----------|---------|------|-------------|-------|------|------|------|---------|--------------------------------|
| HOW INTELLIGENT DO YOU NEED TO BE TO DO WELL IN THESE CORE SUBJECTS? (First survey)                      |              |      |         |           |         |      |             |       |      |      |      |         |                                |
| Student  | Art & Design | D.T. | English | Geography | History | ICT  | Mathematics | Music | MFL  | P.E. | R.E. | Science |                                |
| Eilidh McIntyre  | 3            | 3    | 4       | 4         | 3       | 5    | 5           | 4     | 1    | 2    | 2    | 5       | Intelligence survey Lesson 1   |
| Eva Potamitis  | 3            | 2    | 4       | 3         | 4       | 4    | 4           | 4     | 4    | 2    | 3    | 4       | 1) Mathematics 4.14            |
| Freya Bailey   | 4            | 4    | 4       | 3         | 2       | 3    | 2           | 4     | 2    | 3    | 2    | 3       | 2,3) ICT / Science 4           |
| Isla Seal  | 4            | 2    | 3       | 2         | 3       | 5    | 5           | 4     | 5    | 1    | 3    | 4       | 4) Music 3.71                  |
| Mailee Webb  | 3            | 2    | 4       | 3         | 4       | 4    | 3           | 4     | 2    | 5    | 1    | 3       | 5) English 3.57                |
| Nathaniel James  | 3            | 4    | 2       | 3         | 4       | 5    | 5           | 4     | 4    | 5    | 3    | 5       | 6) Art and Design 3.43         |
| Oliver Hausden   | 4            | 4    | 4       | 3         | 3       | 2    | 5           | 2     | 3    | 2    | 2    | 4       | 7) History 3.29                |
| Total  | 24           | 21   | 25      | 21        | 23      | 28   | 29          | 26    | 21   | 20   | 16   | 28      | 8,9,10) DT / Geography / MFL 3 |
| Average  | 3.43         | 3.00 | 3.57    | 3.00      | 3.29    | 4.00 | 4.14        | 3.71  | 3.00 | 2.86 | 2.29 | 4.00    | 11) P.E. 2.86                  |
|  |              |      |         |           |         |      |             |       |      |      |      |         | 12) R.E. 2.29                  |
| HOW CONFIDENT ARE YOU THAT YOU CAN DO THE HARDEST WORK THAT IS ASSIGNED IN YOUR SUBJECTS? (First survey) |              |      |         |           |         |      |             |       |      |      |      |         |                                |
| Student  | Art & Design | D.T. | English | Geography | History | ICT  | Mathematics | Music | MFL  | P.E. | R.E. | Science |                                |
| Eilidh McIntyre  | 2            | 5    | 3       | 1         | 5       | 3    | 2           | 5     | 4    | 3    | 4    | 2       | Confidence survey Lesson 1     |
| Eva Potamitis  | 4            | 3    | 2       | 4         | 3       | 2    | 1           | 5     | 3    | 4    | 4    | 1       | 1) P.E. 3.86                   |
| Freya Bailey   | 4            | 4    | 3       | 2         | 4       | 4    | 1           | 3     | 2    | 4    | 2    | 2       | 2,3,4) DT / ICT / Music 3.71   |
| Isla Seal  | 4            | 2    | 3       | 2         | 3       | 5    | 5           | 4     | 5    | 1    | 3    | 4       | 5) History 3.57                |
| Mailee Webb  | 3            | 4    | 4       | 2         | 3       | 4    | 3           | 5     | 1    | 5    | 2    | 3       | 6) Art and Design 3.43         |
| Nathaniel James  | 5            | 5    | 4       | 3         | 4       | 5    | 5           | 3     | 2    | 5    | 2    | 5       | 7) English 3.29                |
| Oliver Hausden   | 2            | 3    | 4       | 4         | 3       | 3    | 5           | 1     | 3    | 5    | 3    | 4       | 8) Maths 3.14                  |
| Total  | 24           | 26   | 23      | 18        | 25      | 26   | 22          | 26    | 20   | 27   | 20   | 21      | 9) Science 3                   |
| Average  | 3.43         | 3.71 | 3.29    | 2.57      | 3.57    | 3.71 | 3.14        | 3.71  | 2.86 | 3.86 | 2.86 | 3.00    | 10,11) R.E. / MFL 2.86         |
|  |              |      |         |           |         |      |             |       |      |      |      |         | 12) Geography 2.57             |

| HOW INTELLIGENT DO YOU NEED TO BE TO DO WELL IN THESE CORE SUBJECTS? (second survey)                      |              |      |         |           |         |      |             |       |      |      |      |         |                                     |
|---|--------------|------|---------|-----------|---------|------|-------------|-------|------|------|------|---------|-------------------------------------|
| Student   | Art & Design | D.T. | English | Geography | History | ICT  | Mathematics | Music | MFL  | P.E. | R.E. | Science |                                     |
| Eilidh McIntyre   | 5            | 4    | 3       | 1         | 5       | 3    | 2           | 5     | 3    | 4    | 5    | 4       | Intelligence survey Lesson 9        |
| Eva Potamitis   | 4            | 3    | 4       | 2         | 2       | 5    | 4           | 4     | 5    | 1    | 2    | 5       | 1,2) Science / ICT 4.14             |
| Freya Bailey  | 4            | 4    | 4       | 2         | 4       | 3    | 2           | 3     | 2    | 2    | 3    | 2       | 3) English 4                        |
| Isla Seal   | 3            | 3    | 4       | 2         | 4       | 5    | 5           | 4     | 5    | 1    | 3    | 4       | 4) Mathematics 3.86                 |
| Mailee Webb   | 3            | 4    | 3       | 3         | 3       | 4    | 4           | 3     | 3    | 4    | 2    | 4       | 5,6,7) DT / History / MFL 3.71      |
| Nathaniel James   | 3            | 4    | 5       | 4         | 4       | 5    | 5           | 4     | 4    | 4    | 3    | 5       | 8,9) Art and Design / Music 3.57    |
| Oliver Hausden  | 3            | 4    | 5       | 4         | 4       | 4    | 5           | 2     | 4    | 5    | 4    | 5       | 10) R.E. 3.14                       |
| Total   | 25           | 26   | 28      | 18        | 26      | 29   | 27          | 25    | 26   | 21   | 22   | 29      | 11) P.E. 3                          |
| Average   | 3.57         | 3.71 | 4.00    | 2.57      | 3.71    | 4.14 | 3.86        | 3.57  | 3.71 | 3.00 | 3.14 | 4.14    | 12) Geography 2.57                  |
| HOW CONFIDENT ARE YOU THAT YOU CAN DO THE HARDEST WORK THAT IS ASSIGNED IN YOUR SUBJECTS? (second survey) |              |      |         |           |         |      |             |       |      |      |      |         |                                     |
| Student   | Art & Design | D.T. | English | Geography | History | ICT  | Mathematics | Music | MFL  | P.E. | R.E. | Science |                                     |
| Eilidh McIntyre   | 5            | 3    | 1       | 1         | 5       | 4    | 3           | 5     | 1    | 5    | 5    | 2       | Confidence survey Lesson 9          |
| Eva Potamitis   | 4            | 4    | 3       | 3         | 4       | 1    | 1           | 5     | 2    | 2    | 4    | 2       | 1) History 4.14                     |
| Freya Bailey  | 4            | 4    | 4       | 2         | 4       | 5    | 2           | 3     | 2    | 3    | 2    | 2       | 2,3,4) Art / DT / Music 4           |
| Isla Seal   | 5            | 4    | 3       | 1         | 5       | 4    | 3           | 5     | 4    | 1    | 2    | 5       | 5,6) P.E. / ICT 3.71                |
| Mailee Webb   | 3            | 4    | 3       | 2         | 3       | 3    | 4           | 4     | 2    | 5    | 3    | 3       | 7) Science 3.43                     |
| Nathaniel James   | 3            | 4    | 4       | 3         | 4       | 5    | 5           | 3     | 2    | 5    | 3    | 5       | 8,9,10) English / Maths / R.E. 3.29 |
| Oliver Hausden  | 4            | 5    | 5       | 5         | 4       | 4    | 5           | 3     | 4    | 5    | 4    | 5       | 11,12) MFL / Geography 2.43         |
| Total   | 28           | 28   | 23      | 17        | 29      | 26   | 23          | 28    | 17   | 26   | 23   | 24      |                                     |
| Average   | 4.00         | 4.00 | 3.29    | 2.43      | 4.14    | 3.71 | 3.29        | 4.00  | 2.43 | 3.71 | 3.29 | 3.43    |                                     |



# SURVEY COMPARISONS : INTELLIGENCE NEEDED FOR D&T

- Whole class average :

Rise from **3.1** to **3.33**



- All leaderboard students :

Rise from **3.2** to **3.8**



- Only **final** leaderboard students :

Rise from **3** to **3.71**



- SEND students in the class :

Rise from **3** to **3.8**



# SURVEY COMPARISONS : CONFIDENCE IN THEIR D&T ABILITY

- Whole class average :

Rise from **3.33** to **3.15**



- All leaderboard students:

Rise from **3.9** to **3.8**



- Only **final** leaderboard students :

Rise from **3.71** to **4**



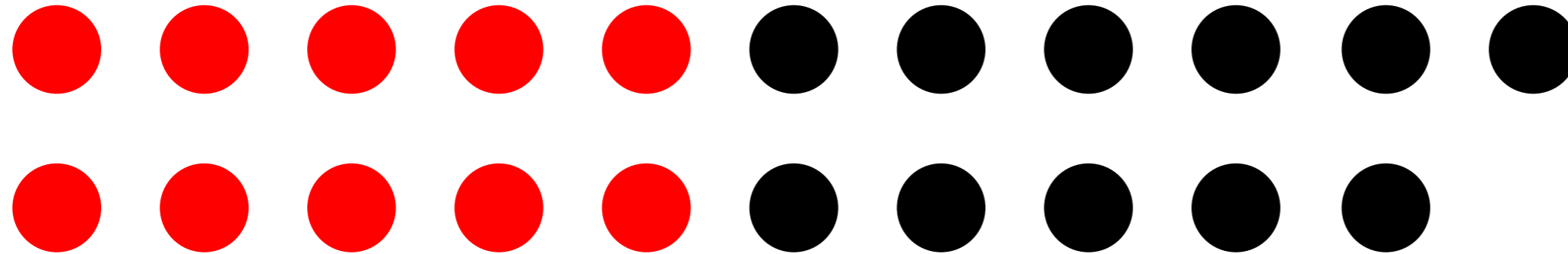
- SEND students in the class :

Rise from **3.8** to **4**

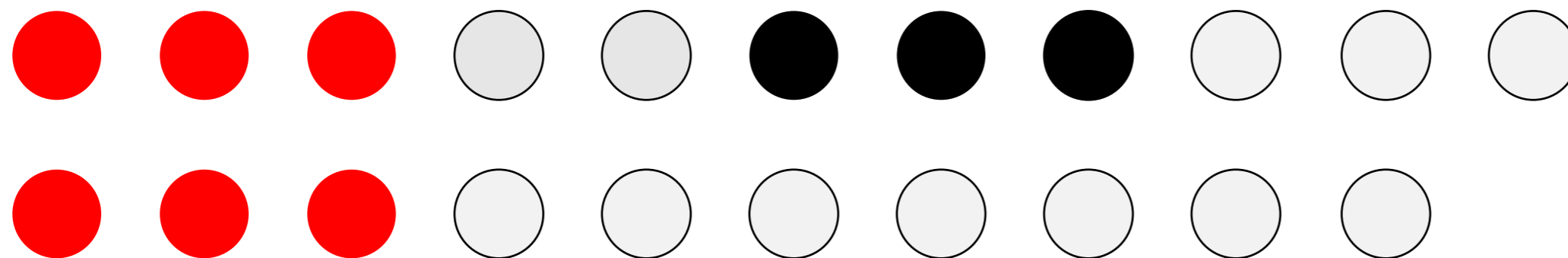


# SEND

- There are 10 students in the class of 21 who have been flagged for an SEND profile.



- 6 of the 9 students on the leaderboard have been flagged for SEND!
- That's  $\frac{2}{3}$  of the leaderboard with an SEND profile.



# SEND

- On average, SEND students' perceptions of D&T intelligence shifted from **3** to **3.8**.
- Their confidence rose from **3.8** to **4** in D&T.

Furthermore...

- Their confidence across all subjects rose from **3.45** to **3.67**, on average.
- The largest rises were in art, **+0.8**, history and R.E., **+0.6**.

# FINDINGS

- My intervention led to an average increase in respect for D&T.
- Self-efficacy in D&T, on average, decreased.

The more the students were on the leaderboard, the higher their respect for the subject and their confidence grew.

# INTERVIEWS – “DID YOU THINK YOU’D BE ON THE

## **Student 4**

“No, I didn’t expect to be on the leader board. I’ve always thought that I wasn’t intelligent, so the fact that I got the answers right, I was like, what – that must be wrong.”

“I definitely thought the first time was just ‘first time lucky.’ If I’m completely honest, I was just like ‘maybe it was just like all the guesses I got correct.’

“The fact that I’m still on the leader board, it really surprises me, actually.”

## **Student 5**

“I didn't think I would be, no.”

## **Student 18**

“I’m shocked! [...] I hoped I’d be, but I didn't think I would be.”

# INTERVIEWS – “WHY?”

## **Student 9**

“I thought I wasn’t intelligent because I'm not good at academic stuff. [...] Everything's so academic based now. Yeah, like GCSEs, they’re just a memory test at this point. And it's so hard because I don't have a good memory at all. [...] Yeah, so the fact that, like, my GCSE's are a memory test that freaks me out.”

## **Student 12**

“It’s not that I thought I wasn’t intelligent, I just thought there were people in that room who were more intelligent than me, so I thought they would be higher up – than me. [...] Mainly because I know them in a lot of other subjects. Like there's loads of them in my maths class. So I thought that a lot of them would get higher because I'm not great at maths.”

## **Student 4**

“But when it's visual learning, even just diagrams, it helps so much, yeah. And I feel like I'm so much smarter than I am in school, but I feel like I'm not intelligent when it's just memory and reciting things.”

# INTERVIEWS – “HOW DO YOU FEEL?”

## **Student 9**

“We’re very proud.”

## **Student 12**

“Oh, my God, I can actually do this stuff.”

## **Student 18**

“Shocked!”

## **Student 19**

“Probably shocked as well, maybe a little bit. Excited to try and beat [Student 18].”



# INTERVIEWS – SELF-IDENTIFYING SEND

## **Student 4**

"I'm quite good at spotting patterns, so I found it pretty easy at the start. Yeah, because I think I might have, like ADHD or autism or something along those lines. So I kind of think like I can see patterns really easily. And I'll say it to other people, like, 'hey do you see that?', and they'll be like, no, what even is that?"

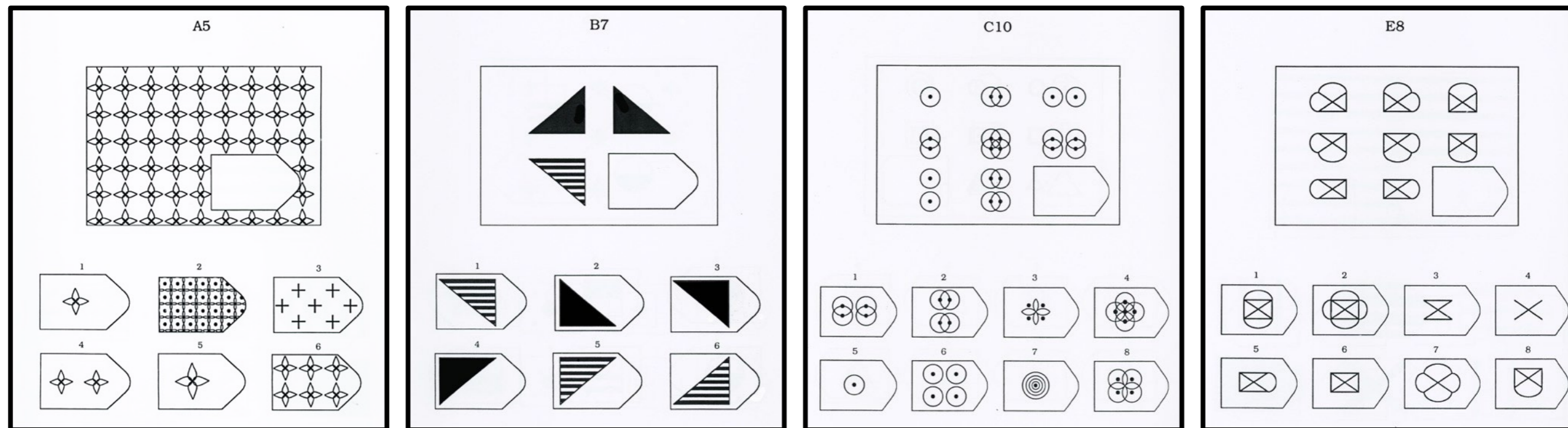
## **Student 18**

"Like also, I can't read a book and take in the knowledge - I can't read it with my own eyes. Yeah, it's not that I'm dyslexic or anything. It's just like I will not remember it. If someone's, like, reading it to me or there's, like, a video of it I'll remember it more because it's visual and I can see what's being written down. I use highlighter for every single piece of my work because colour coding helps me. It's all visual for me."

## **Student 12**

Yeah. Also, when you said about like visual things, I find that when we're in class if someone was to put on a video, then I would remember a lot more from that video than when they're just constantly talking. Yeah. Even if there were, like, pictures on the board, I would still tune in more to a video because everyone would actually be quiet and like, watch. And it's easier to, like kind of understand when they're actually demonstrating it. Instead of just being like this, 'this is what would happen', but when they actually show it when it happens in a video, it makes a lot more sense.

# DISCUSSION

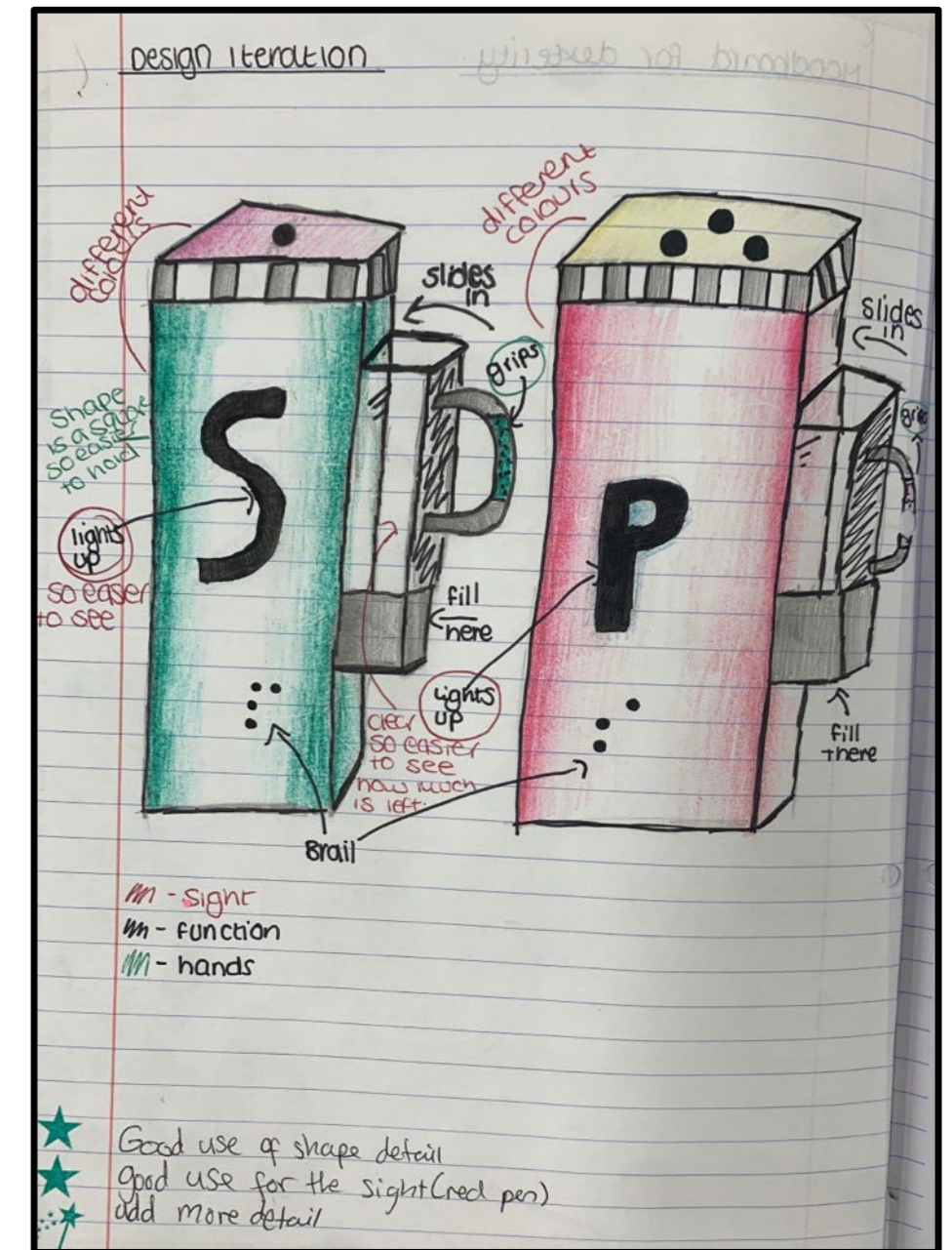
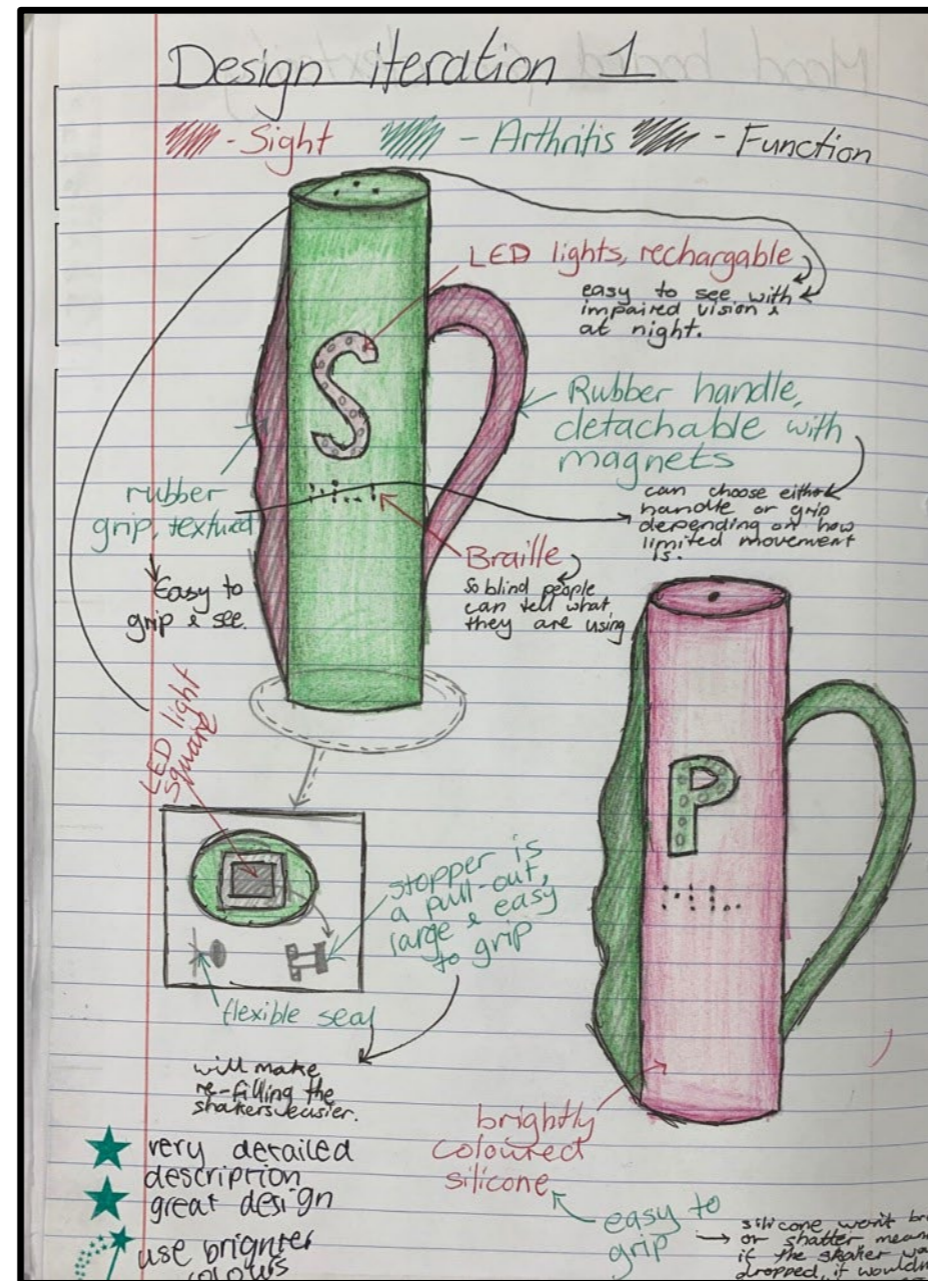
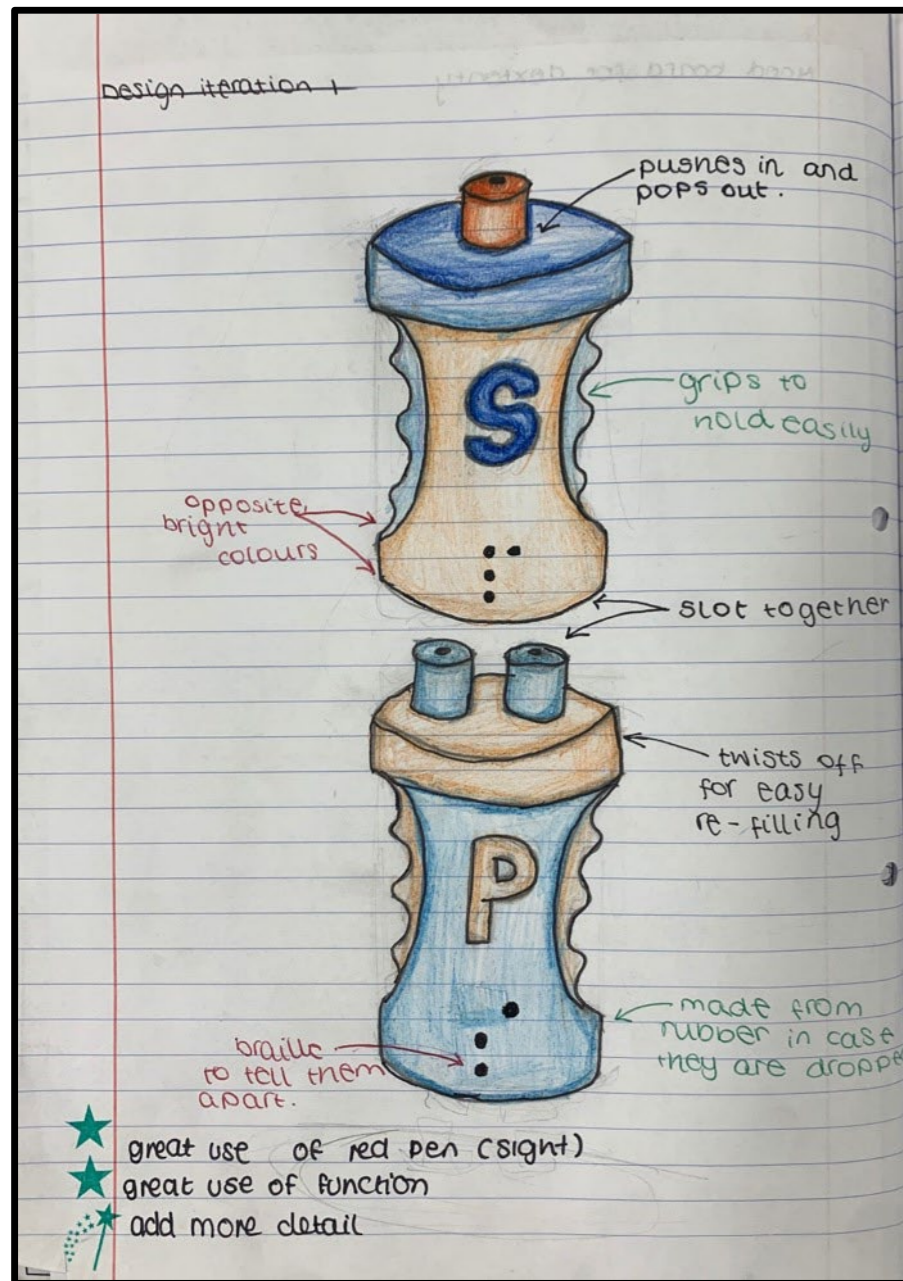


DID I BOOST THE CONFIDENCE OF THE CORRECT STUDENTS?

WAS “EDUCTIVE” INTELLIGENCE THE CORRECT THING TO TEST

AND CELEBRATE?

# TRIANGULATION



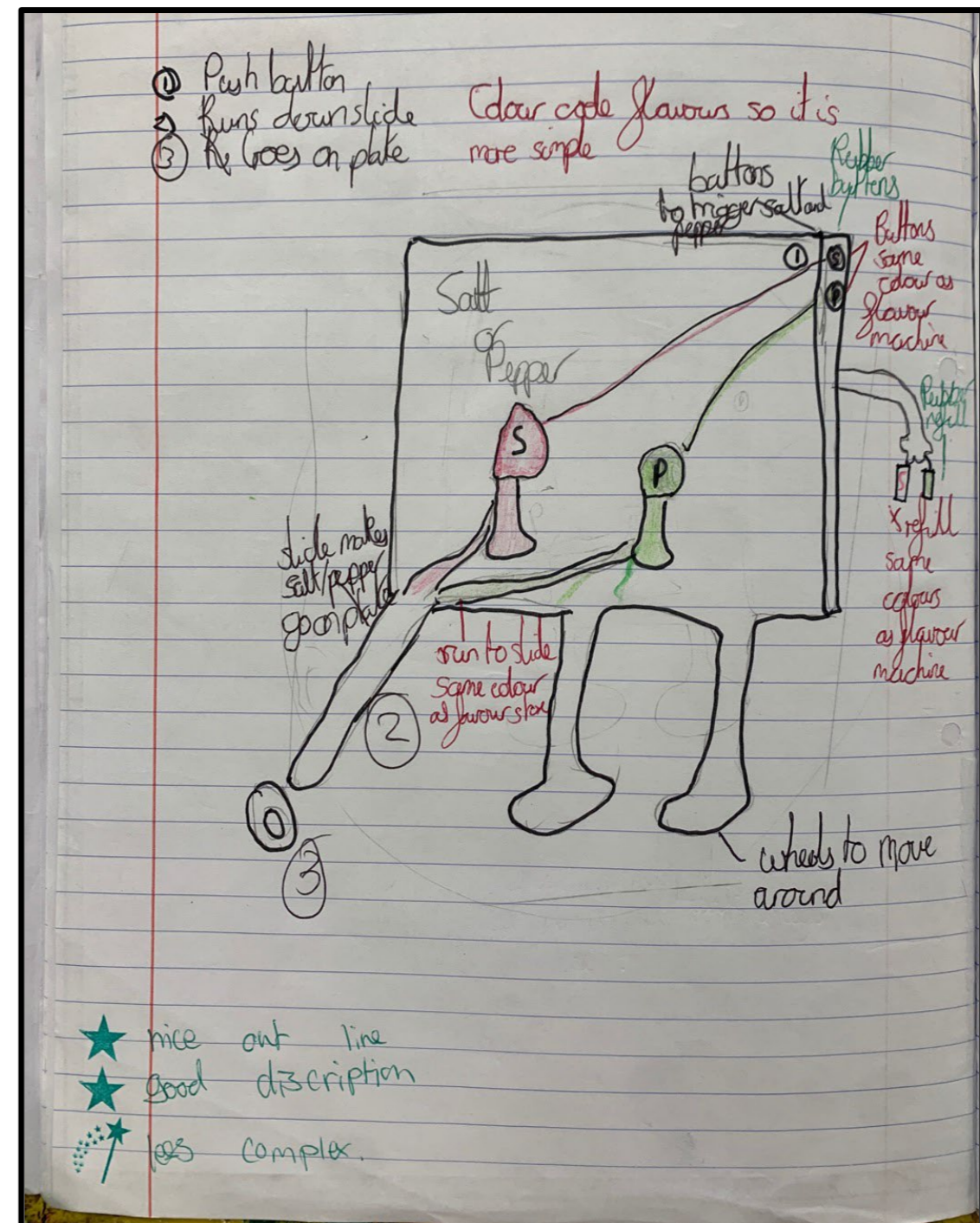
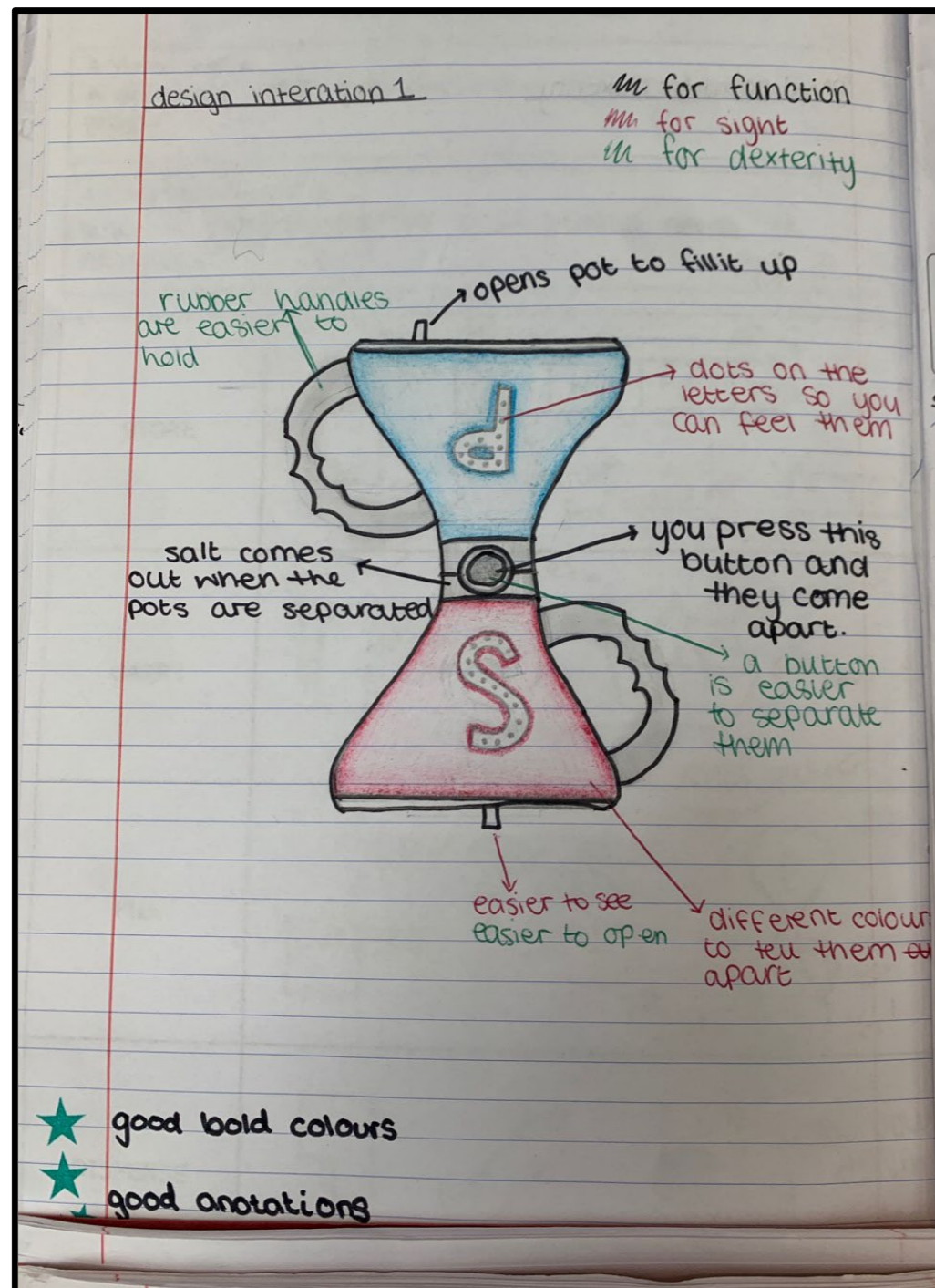
- The top three students on the leaderboard created insightful design

- Their book work was amongst the best top 4 best graded in class

# TRIANGULATION

- However, some students who were also top-graded did not make the leaderboard (left). This student also had the highest nonverbal cognitive ability score from their CATs tests.

- Some students with low-graded work did enter the final leaderboard (right). This student also had a low nonverbal cognitive ability score from their CATs tests.



# ETHICS

- Students 16, 20 and 21 all had very good book work, but did not once enter the leaderboard.
- Surveys indicate that student 16's confidence did decrease from "somewhat confident" to "slightly confident" in D&T.
- This is an important ethical concern – which goes against the aim of my project.
- Focussing on "Educative" intelligence was too reductive for the leaderboard.

# ETHICS

- However, I would describe students 4, 5, 9, 12 and 15, the top five students on the RPM leaderboard, as in the top six attaining students in this DT class.

# NONVERBAL CAT SCORES VERSUS LEADERBOARD RESULTS

| Student    | Non-verbal SAS - Y7 CAT scores | Times entering the leader board | Placement on final Leader board |
|------------|--------------------------------|---------------------------------|---------------------------------|
| Student 16 | 122                            | 0                               | -                               |
| Student 12 | 114                            | 3                               | 2                               |
| Student 18 | 114                            | 4                               | 4                               |
| Student 6  | 110                            | 0                               | -                               |
| Student 5  | 109                            | 7                               | 1                               |
| Student 20 | 108                            | 0                               | -                               |
| Student 13 | 107                            | 0                               | -                               |
| Student 19 | 104                            | 3                               | 3                               |
| Student 11 | 104                            | 0                               | -                               |
| Student 17 | 103                            | 1                               | -                               |
| Student 21 | 103                            | 0                               | -                               |
| Student 4  | 103                            | 7                               | 2                               |
| Student 10 | 102                            | 2                               | -                               |
| Student 1  | 101                            | 0                               | -                               |
| Student 15 | 98                             | 3                               | 4                               |
| Student 9  | 95                             | 7                               | 1                               |
| Student 3  | 95                             | 2                               | -                               |
| Student 14 | 84                             | 0                               | -                               |
| Student 8  | 77                             | 0                               | -                               |
| Student 2  | 74                             | 0                               | -                               |
| Student 7  | -                              | 0                               | -                               |



# TRIANGULATION

- There is not a positive correlation between the Year 7 nonverbal cognitive tests and my leaderboard tests
- The highest scoring student on the Year 7 nonverbal cognitive test never got onto the leaderboard

# EAL

- Students with English as an Additional Language.

Design Iteration

The bumpers for blind people to run their finger down them

You use plus and minus buttons and poor how many plus you want

You turn the wheel to let the salt or pepper out

There needs to hold it.

This is where the salt and pepper come out

The P and S are a different colours.

Key:  
How it Functions  
Sight  
Dexterity

- Great job!  
- Insightful design  
- Please do not use the black pen which bleeds through the page.  
- Get peer assessment done

# FINAL THOUGHTS...

At the heart of this paper is a belief that the English education system enacts systemic discrimination against nonverbally intelligent students by teaching and assessing non-academic subjects via academic means.

I believe that this bias against nonverbally biased people is endemic in our wider culture.

My research was too reductive, and placed too much emphasis on only “eductive” intelligence, rather than the wider gamut of design ability.

Despite the flaws and limitations of my research, the SEND results were enlightening. I believe there are sinister implications for the types of minds we are labelling as SEND or Disabled.