Usage guidelines

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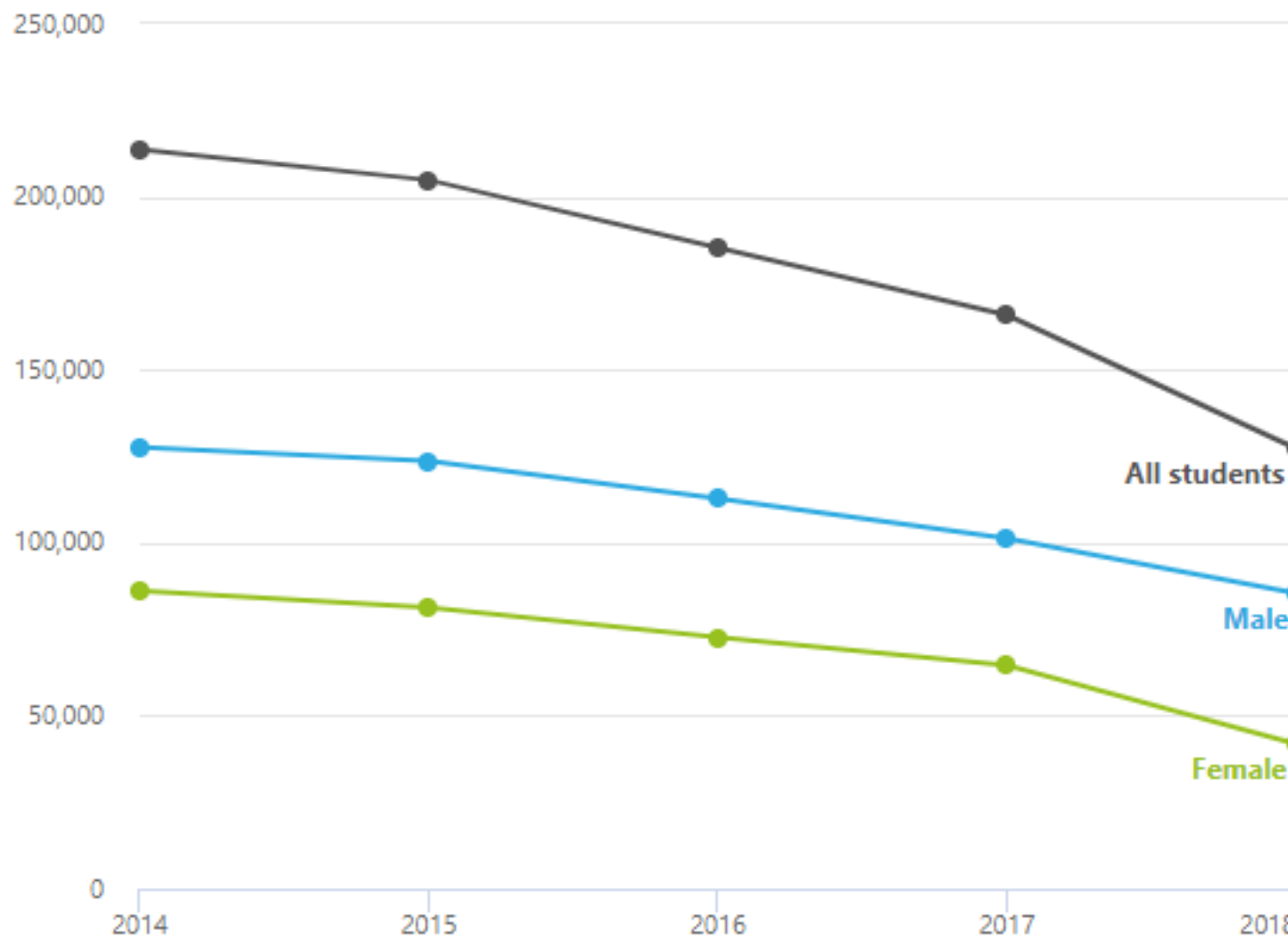
contact sure@sunderland.ac.uk.

Introduction

- *Within the UK design and technology is in serious decline*

- *There is limited solid research base from which to build*

- *This paper could be viewed as call to action by the UK design and technology community*

GCSE entries in design and technology, 2014-2018

All students, UK-wide
Number of entries

Uptake in the Subject

New Teachers?

Biology — 153%
Physical Education — 116%
English — 110%
History — 101%
Modern Foreign Languages — 88%
Classics — 87%
Geography — 85%
Drama — 83%
Chemistry — 79%
Business Studies — 75%
Art & Design — 73%
Computing — 73%
Music — 72%
Mathematics — 71%
Religious Education — 58%
Physics — 47%
Other — 43%
Design & Technology — 25%
Primary — 103%
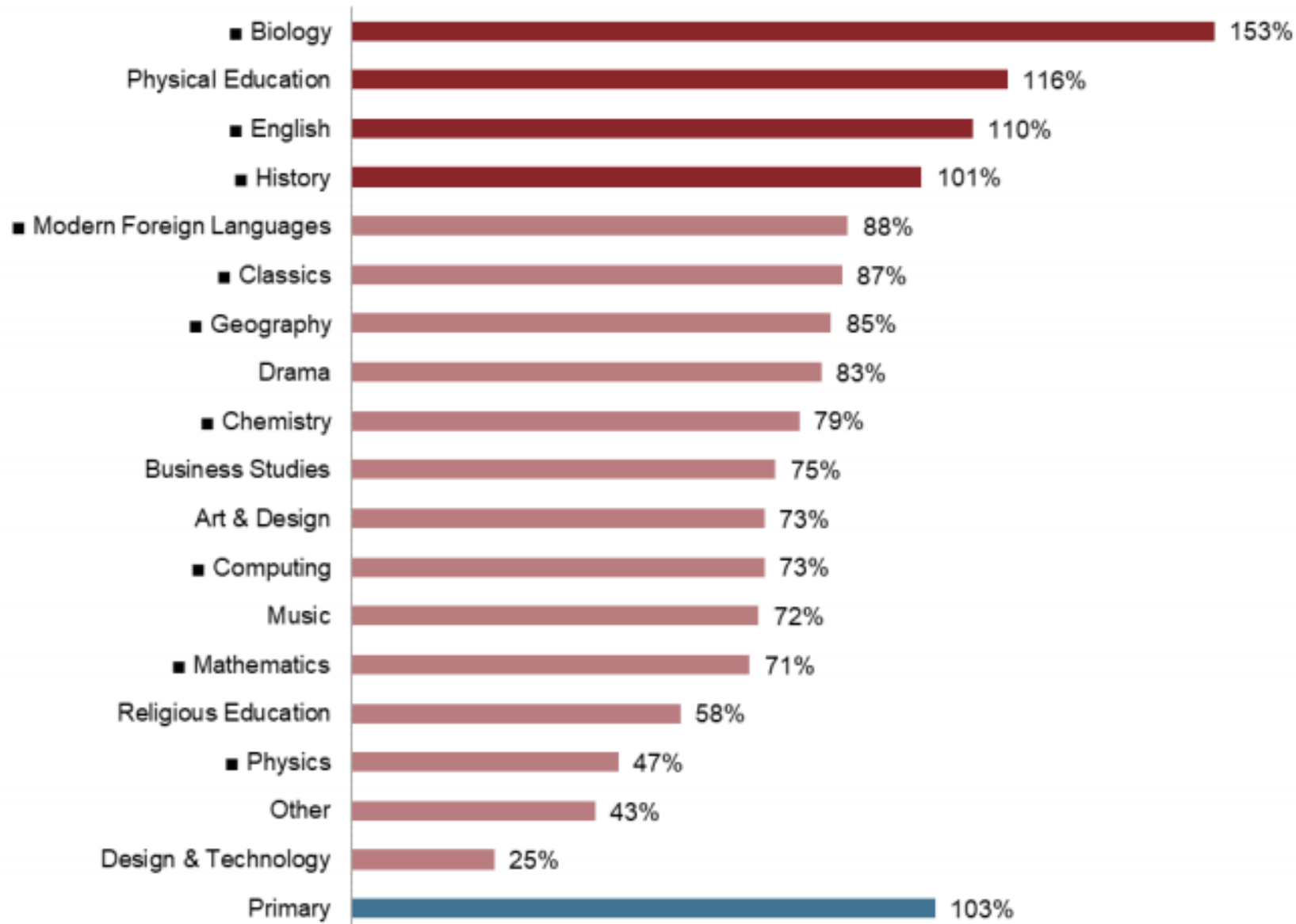
Pre-Service Teachers Starting Training in Relation to National Targets (November 2018)

New Teachers?

Subject	2017/18r			2018/19p		
	Recruited	Target	Contribution to target	Recruited	Target	Contribution to target
■ English	2,125	2,426	88%	2,815	2,558	110%
■ Mathematics	2,385	3,102	77%	2,195	3,116	71%
■ Biology	1,005	1,188	85%	1,815	1,188	153%
■ Chemistry	865	1,053	82%	835	1,053	79%
■ Physics	695	1,055	66%	575	1,219	47%
■ Computing	450	723	62%	530	723	73%
■ Classics	55	69	83%	60	69	87%
■ MFL	1,375	1,514	91%	1,405	1,600	88%
■ Geography	1,190	1,531	78%	1,300	1,531	85%
■ History	1,155	1,160	100%	1,190	1,180	101%
Art	420	577	73%	475	646	73%
Business Studies	170	218	78%	180	241	75%
Design & Technology[12]	300	917	33%	295	1,167	25%
Drama	255	345	74%	295	357	83%
Music	295	393	75%	295	409	72%
Other	395	812	49%	385	896	43%
Physical Education	1,105	999	110%	1,250	1,078	116%
Religious Education	400	643	62%	375	643	58%
Total EBacc	**11,305**	**13,821**	**82%**	**12,725**	**14,237**	**89%**
Total Secondary	**14,645**	**18,726**	**78%**	**16,280**	**19,674**	**83%**
Primary	**12,500**	**12,121**	**103%**	**12,975**	**12,552**	**103%**
Total	**27,145**	**30,847**	**88%**	**29,255**	**32,226**	**91%**

Do We Help Ourselves?

STEM vs Design and Technology

Maker Movement = Computer Science?

Old(er) Technology vs New Technology

Assessing Products rather than knowledge or skills

Outsider Perceptions

Woodwork / Metalwork / Technical Drawing / Cooking / Sewing

Low Quality Outcomes = No Success = No Learning

Lack of "Academic" Status

Expensive

Often for those considered to be less academically able

How to Reverse This?

Albert Einstein is widely credited with saying, "The definition of insanity is doing the same thing over and over again, but expecting different results".

The Research Question

What is design and technology fundamental purpose; why should it exist?
and irrespective any barriers, what should a re-imagined design and technology curriculum 'look like'?

- *UK based study drawing upon the perspectives of UK Design and Technology 'royalty'*

- *Informed by grounded theory (to enable concurrent data collection with analysis informing subsequent phases)*
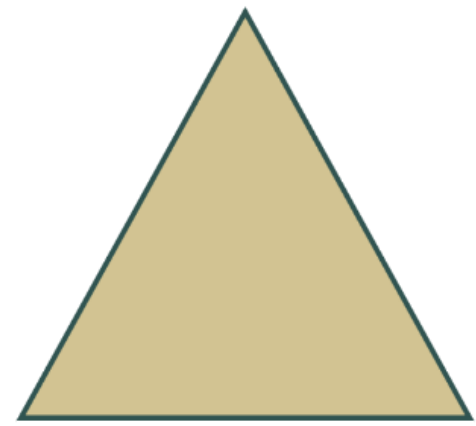
- *A living document, this is the start of the conversation*

Participants and Approach

Analysis and Presentation of Data

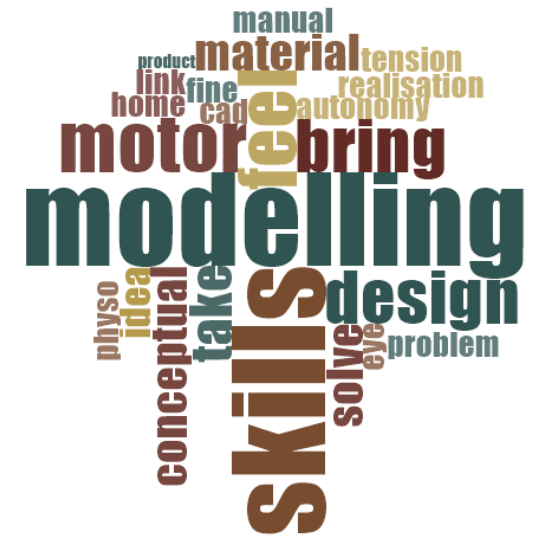Design and technology activity: ideation, realisation and critique
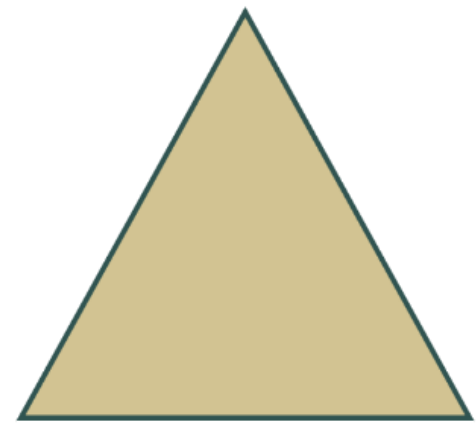
Ideation

Critique

Realisation

Discussion

Design and technology activity (ideating, realising and critiquing)
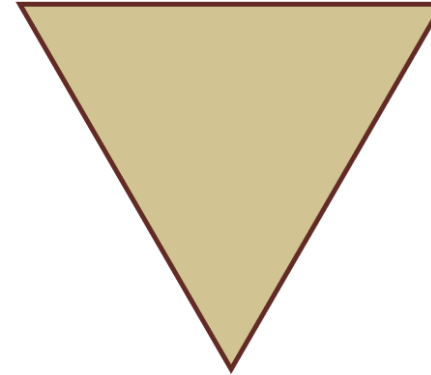
Disentangle the data in order to bring to the fore common insights and understandings:

- Curriculum intentions (knowledge, experience and learner dispositions)

- Tensions (materials and the STEM agenda)

Discussion

Experience   Knowledge

Disposition

Design and technology curriculum intentions: experience, knowledge and disposition

Curriculum intentions and 'non-negotiable' common ground

Discussion

Spanning all participant responses, a series of desirable **dispositions** for learners emerged. Participants felt strongly that the subject should seek to develop attributes including team building, communication (including the extrapolation of ideas) and collaboration. Resilience, and the development of an ability to take informed risks and engage in 'proud failures' was also cited by participants.

Discussion

The third category, **knowledge**, extends beyond the boundaries of the subject and relates to participant perceptions of a broader body of knowledge. Dimensions of knowledge considered were, by the learner in relation to political and global agendas, knowledge for action and situated knowledge, within the context of other subject disciplines.

A second emergent category, **experience**, relates to what learners 'do' (i.e. what they experience) within the subject, what is important to know. Participant responses include reference to authentic approaches to problem solving, context and an awareness of human needs and wants within a technological society.

Tensions?

A number of commentators, including the National subject association, have discussed the relevance of design and technology as a subject for the 21st century within the context of STEM.

However, irrespective of the participants background or material area during analysis we were surprised that in discourse responses made little or limited reference to STEM
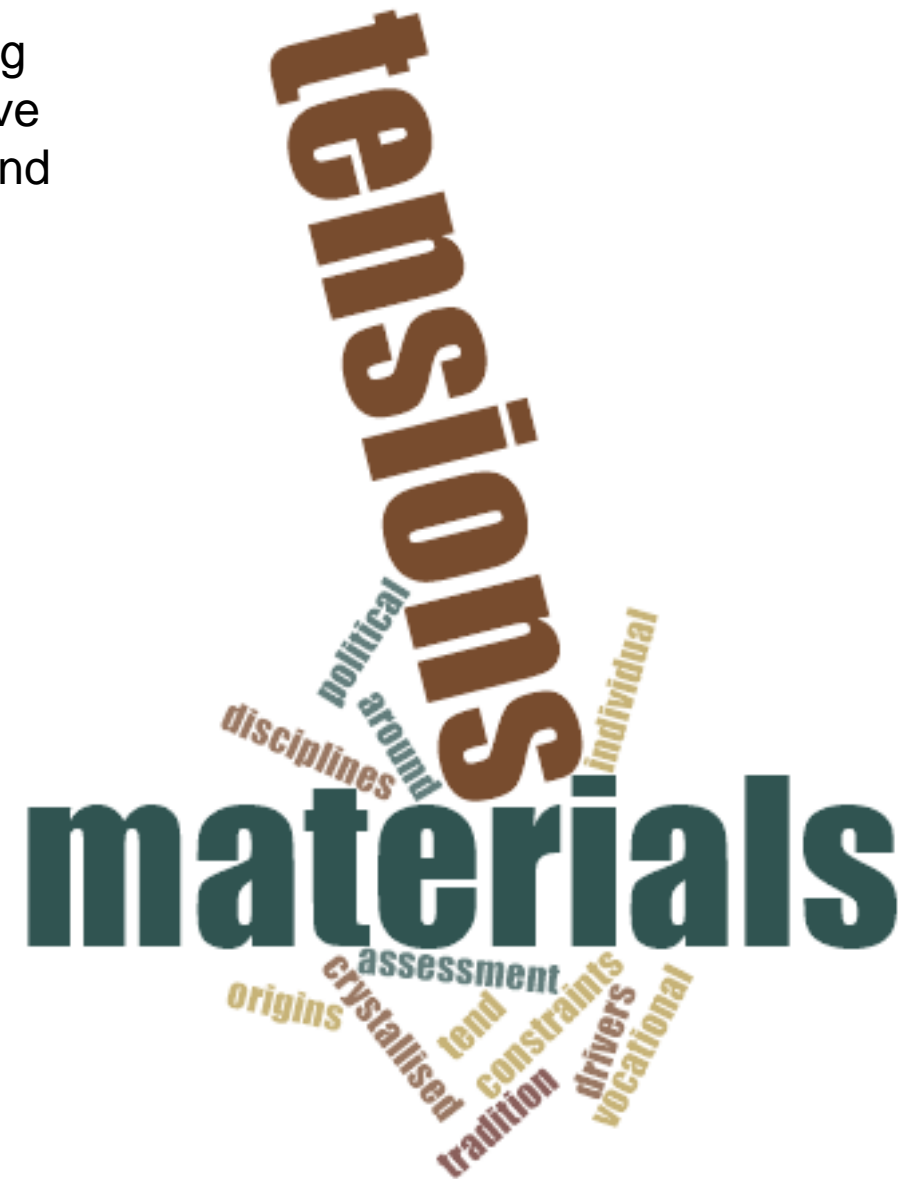
Conclusions
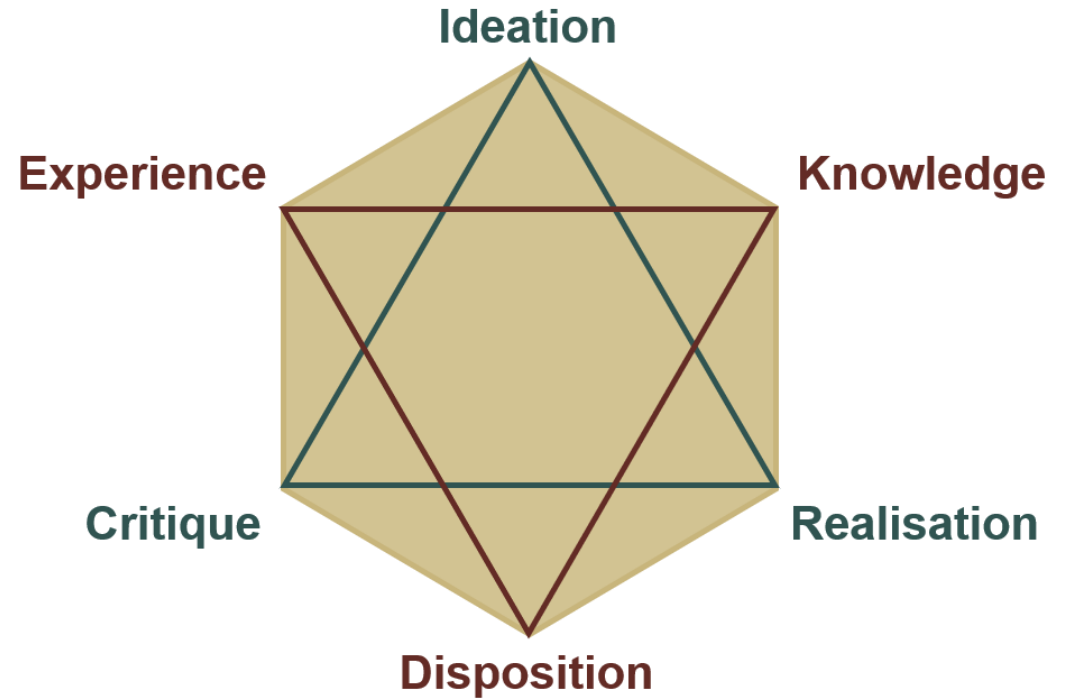
Challenging current and historic
understandings of design and technology: A working model

Rather than seeking to reclaim, re-name or re-frame, throughout we have sought to avoid a focus on repairing the subject, which we believe would potentially result in a make do and mend approach to the development of a revised curriculum.

Next steps

In the spirit of the living document approach which has been adopted for this work we welcome contributions from the community, and invite the open critique, adaption and development of this paper. In turn drawing from those new, additional perspectives it is our intention to continue to maintain communication, and to keep the conversation growing.

Acknowledgements

Thank you for listening

Questions?

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