The STEM Programme

Science-Technology-Engineering-Mathematics

DfES and DTI

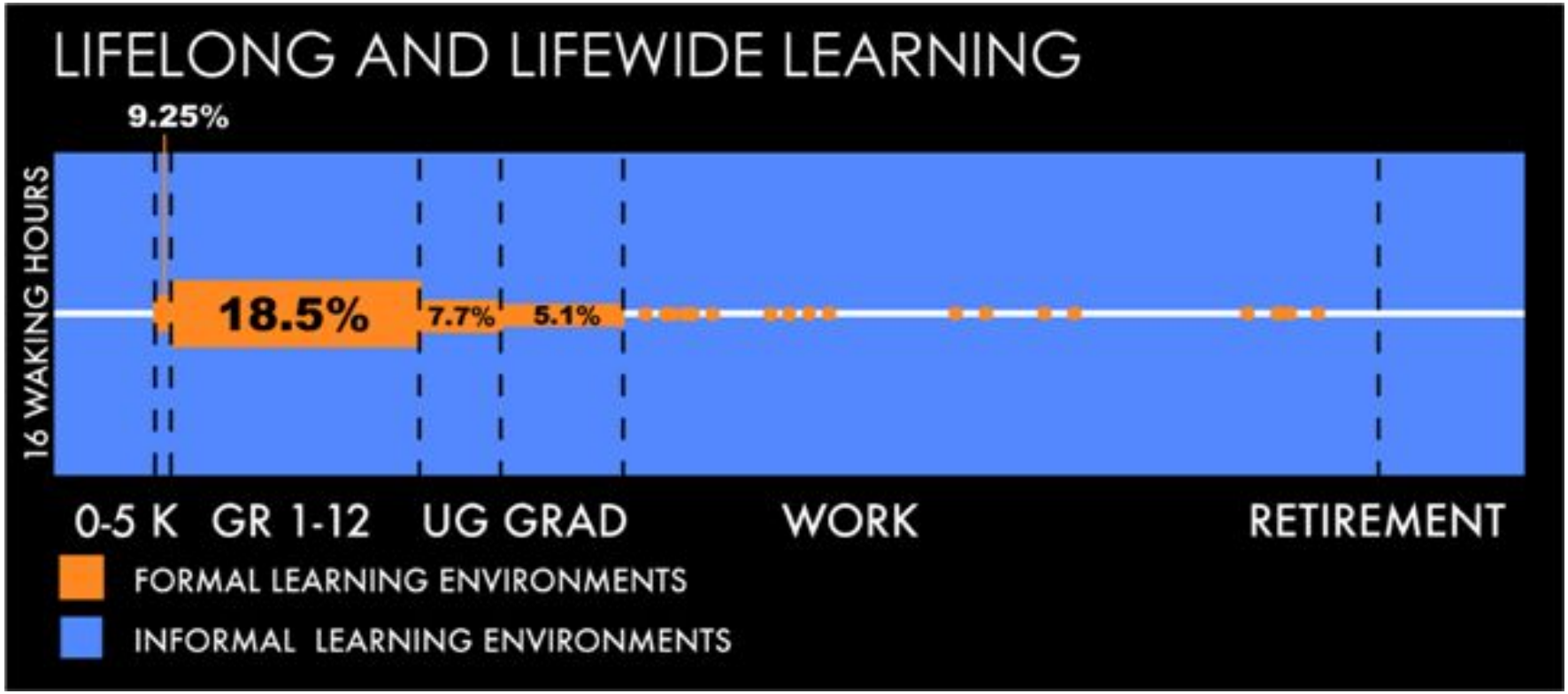
John Holman

The STEM Programme

Science-Technology-Engineering-Mathematics

DfES and DTI – and many partners

John Holman



John Bransford, the LIFE Centre, University of Seattle

The aims of the STEM programme:

- Improve attainment in STEM subjects, as measured by assessments in science and mathematics at ages 14, 16 and 18
- Increase engagement in STEM subjects, as measured by numbers opting to study for qualifications at Level 3 and beyond in STEM subjects.

A rationale for STEM support

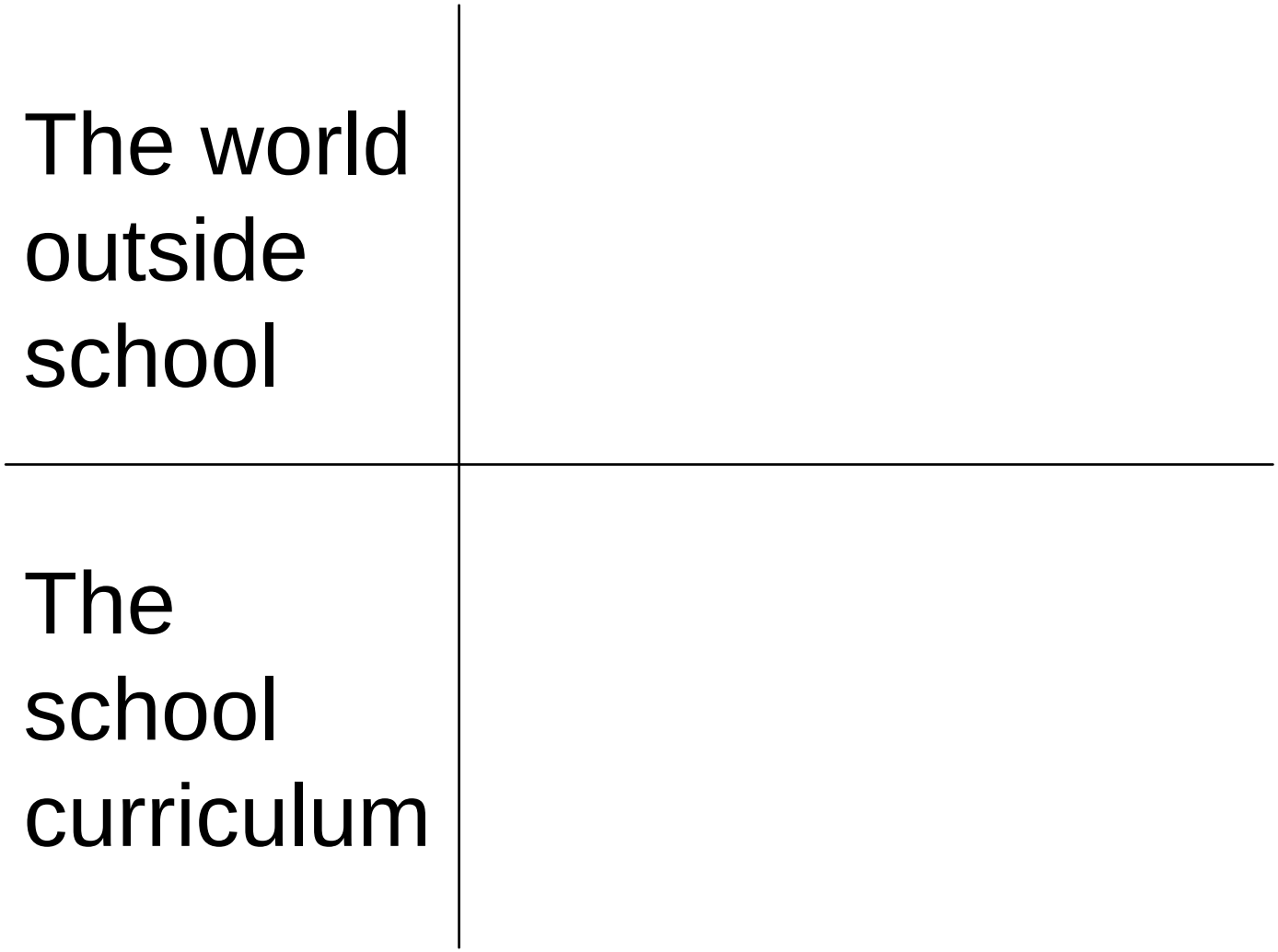
- Inspiring **teachers** who know their **specialist subject** are most important of all. We need programmes to **recruit** more, especially in chemistry, physics and maths, and to **convert** non-specialists to teach these subjects. Even experienced specialist teachers need to keep their teaching sharp, and we need programmes of **continuing professional development** to help teachers renew their teaching skills and keep up with new developments in the curriculum. This will also help **retain** them in teaching.
- We know that specialist GCSE teaching encourages more pupils to take science and maths past the age of 16. We have programmes to encourage schools to offer **triple science** GCSE, and we are developing a **second maths** GCSE.
- Studying science and maths can lead to a wide range of rewarding careers, and we need to tell pupils about them, at an age when they are still making up their minds. **STEM careers awareness** includes finding out what goes on in industry and higher education, through programmes to **enhance and enrich** maths and science teaching, both inside and outside the curriculum.
- Students respond positively to **practical work**, which is the essence of science, technology and engineering. We need to programmes to encourage stimulating practical work, and a programme of **laboratory renewal** to support it. **Science and engineering clubs** are a way that practical projects can be pursued outside the curriculum.

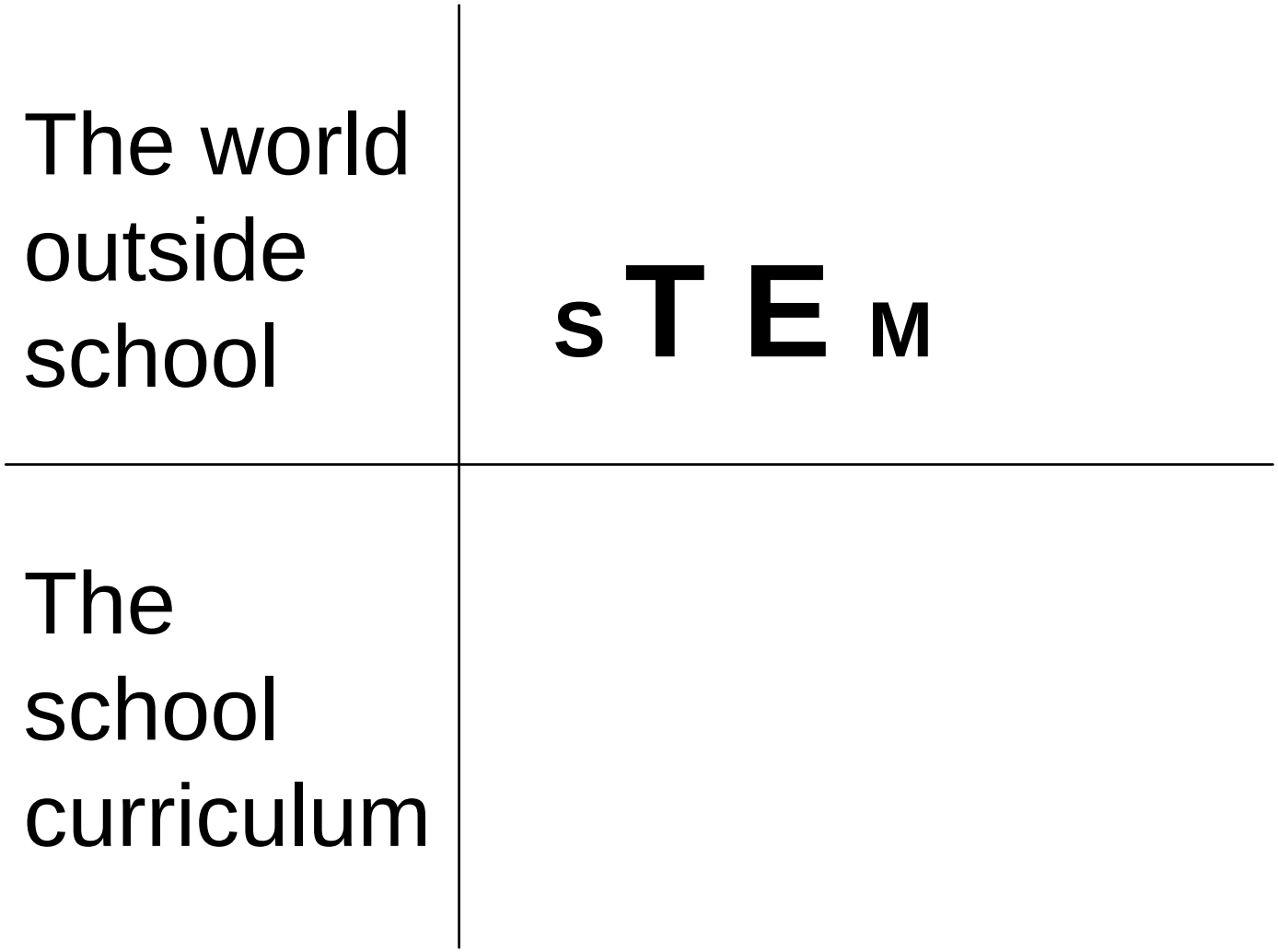
Start with the schools

Imagine

- A primary school teacher who wants to show her class how science and maths are applied in industry
- A secondary teacher, a biology graduate, who wants to teach physics
- A secondary school teacher who wants to start a science club
- A Maths specialist school head who wants to run an enterprise day with a Maths theme

Where do they look for help?


The world outside school
The school curriculum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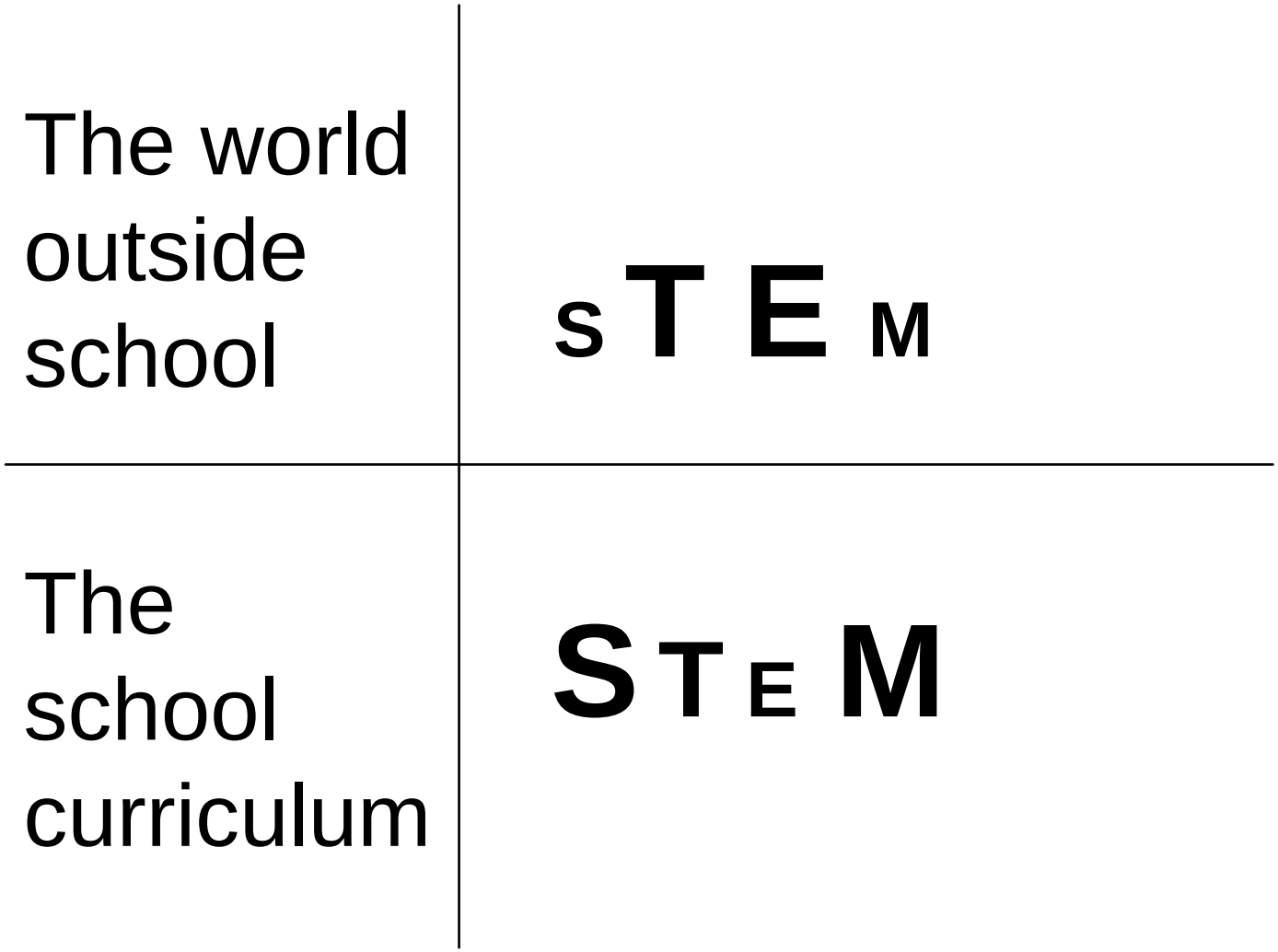
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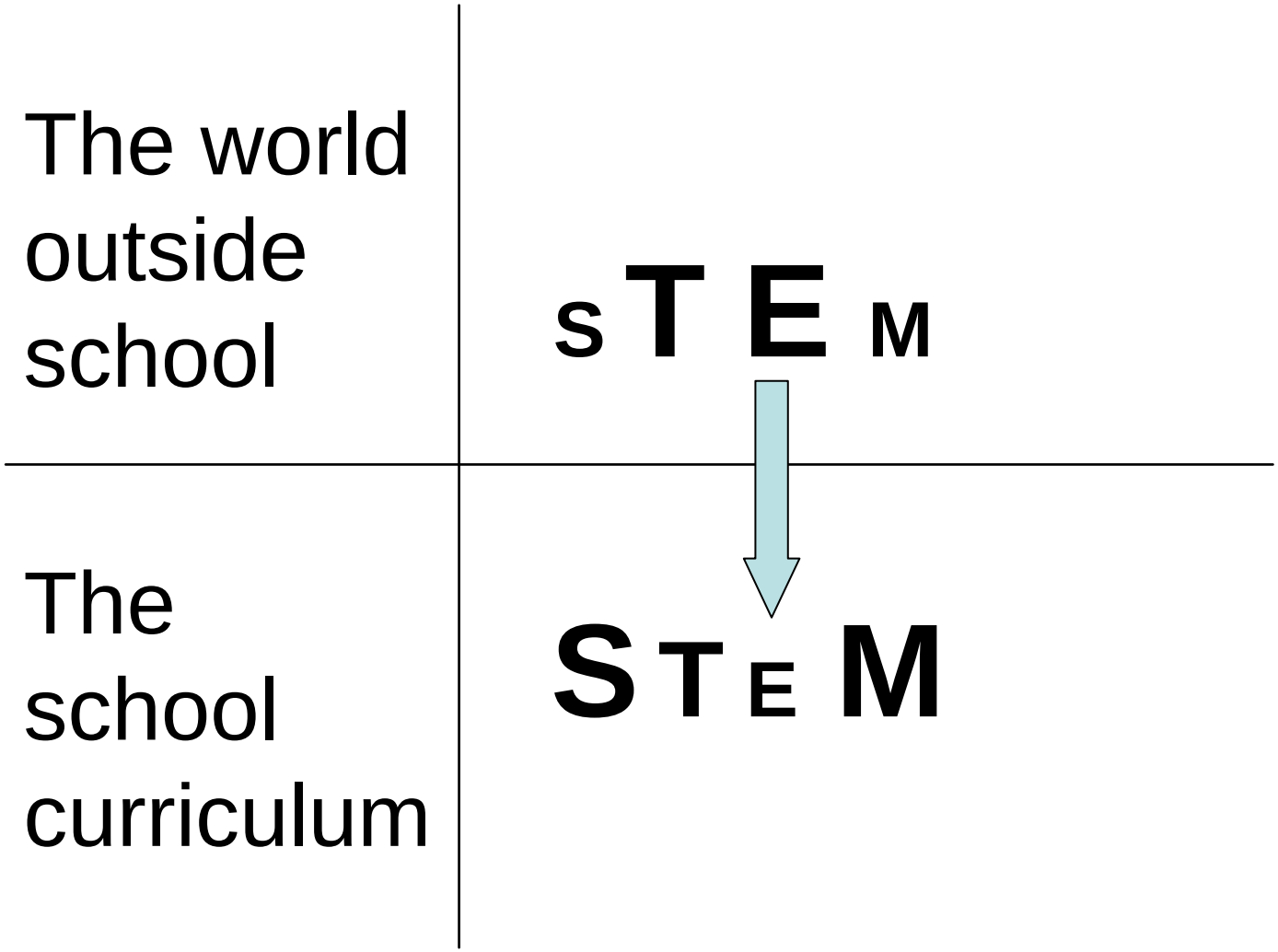
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STEM programme

Consulting widely and on track with plans for

- Establishing links with partner organisations
- Establishing the ‘STEM Community Portals’
- Co-ordination of teachers’ CPD
- Co-ordination of enhancement and enrichment activity
- A clearer system for decisions on funding schemes
- Better guidance on STEM careers for students