



A quick international overview of the function of textbooks and related materials



Maths

Percentage of students whose teachers use...

	England	Singapore	Finland
Textbooks as a basis for instruction	10	70	95
As a supplement	64	23	3
Workbooks or worksheets as a basis	11	71	37
As a supplement	78	29	61
Concrete objects or materials	39	34	15
As a supplement	59	66	83
Computer software as a basis	24	16	5
As a supplement	74	80	69

(Mullis et al 2012)

Science

Percentage of students whose teachers use...

	England	Singapore	Finland
Textbooks as a basis for instruction	4	68	94
As a supplement	45	27	6
Workbooks or worksheets as a basis	4	69	40
As a supplement	82	31	54
Science equipment and materials as a basis	62	60	7
As a supplement	38	40	90
Computer software as a basis	15	19	1
As a supplement	74	78	61

(Martin et al 2011)

TALIS 2018 – time allocations – workload crisis in England

Time spent upon teaching and non-teaching tasks reported by full-time primary teachers in England compared to other countries

Country	Teaching hours	Total non-teaching hours
Chinese Taipei	16.3	33.7
Japan	23.3	32.0
England	24.1	31.9
Vietnam	21.7	30.5
UAE	23.8	30.4
South Korea	20.3	26.0
Average	22.5	25.7
Buenos Aires	22.6	24.7
Sweden	20.1	24.4
Spain	23.4	22.2
Flemish Belgium	24.6	22.1
Denmark	21.1	20.3
France	24.7	19.9
Turkey	26.2	16.6

Notes: Figures refer to average number of hours per week, as reported by teachers. England compared to the TALIS average and all participating countries.

TALIS 2018 – overall role satisfaction

Most primary teachers in England are satisfied in their job

Most primary teachers in England are satisfied in their job. 78% agree or strongly agree that the advantages of being a teacher outweigh the disadvantages, while 76% would continue to choose to become a teacher if they were to make their choice again. Only around one-in-ten primary teachers in England expressed regret about their career choice.

Although most lower-secondary teachers in England are satisfied in their job, levels of satisfaction are lower than in other countries

Most lower-secondary teachers in England are satisfied in their job. As the chart below demonstrates, around 70% agree or strongly agree that the advantages of being a teacher outweigh the disadvantages, and that they would continue to choose to become a teacher if they were to make their choice again. Only around one-in-eight lower-secondary teachers expressed regret about their career choice.

Models of progression and conceptions of the child

Individualised/personalized learning

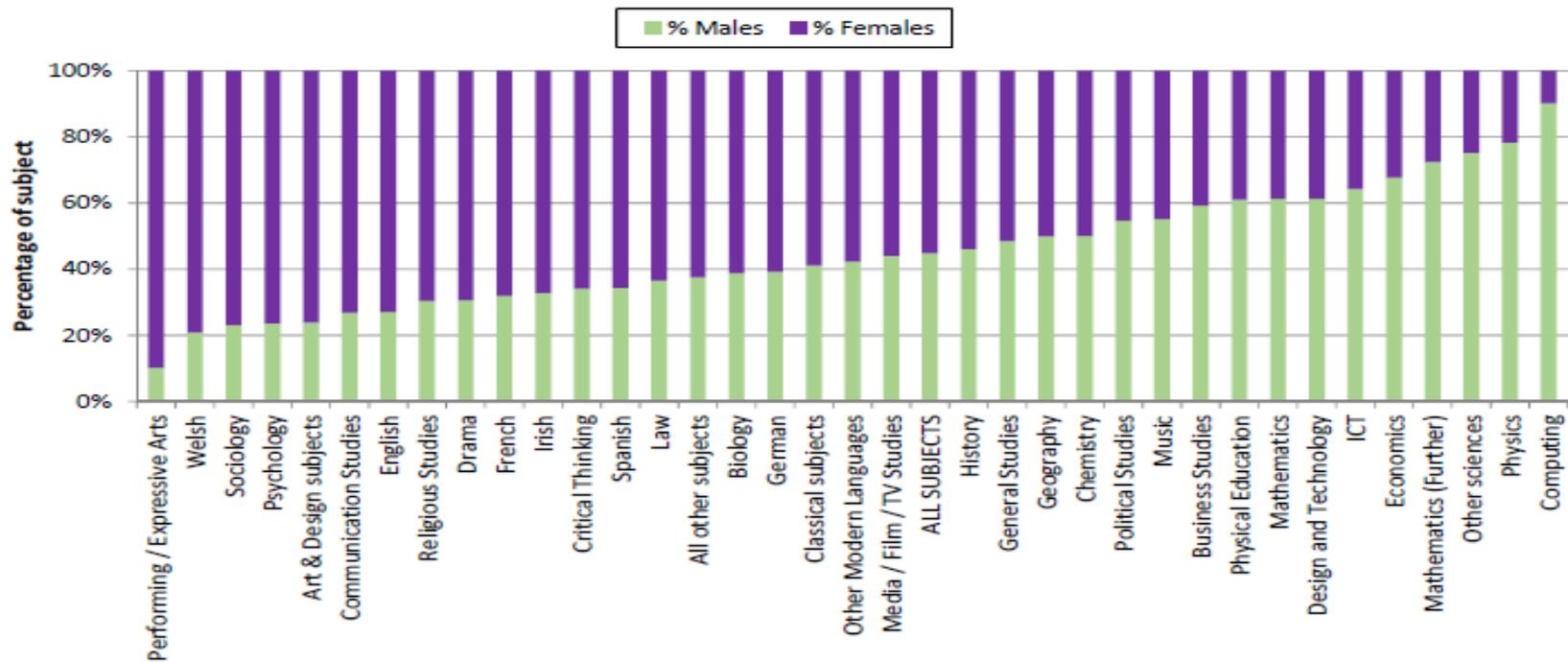
Teacher directed v personalized learning

‘Locked-in’ low expectations

When does responding to learner preference become a systematic disadvantage for each child?

Differences between male and female A-level subject choices

Source: JCQ Summer 2016 results data



The assets of high quality materials

Domain

Schema

Direction and sequence

Multiple representation

Reinforcement

Linkages and associations

Elaboration and extension

Supporting evidence-based pedagogic and didactic models

Function of 'textbooks'

'Steering mechanism of education' - mediating NC/National Standards

Reducing teacher workload

Conveying values and models of ability

Delineating learning progressions and sequences

Focusing on key concepts, principles, operations and core knowledge

Providing 'intelligent practice'

Helping understand 'depth of treatment' of ideas and content

Exposing pupils to ideas

Supporting 'production' (writing, speaking, drawing, etc)

Providing formative assessment, pre-assessment and end-assessment

Going backwards and forwards - rehearsing, revising, anticipating

Given pupils a sense of the 'size and scope' of a subject - a schema

Supporting reform, improvement and maintenance of quality

Supporting home-school links through homework exercises, discussion in the home...

Disseminating good practice

Helping with curriculum continuity when teachers are absent or change

Moderating the adverse impact of variation in teacher quality

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Post-modernist residue

Anti-textbook ethos (Marsden 2002; Vinde 2017)

The error of ‘good teachers do not use textbooks’ (Reynolds & Farrell 1996; Oates 2012)

Confusions about ‘authority’

Authority – power associated with the production of knowledge

Authority – of the school in ‘legally holding children’

Authority – of the teacher

Authority – of the State in determining the curriculum

Authority – of instruments of curriculum control

Authority – of knowledge

Benefits of high quality textbooks and materials

Workload

Delivery of entitlement regarding national curriculum

Curriculum coherence

Checks on progress

Individual learning – equity and attainment

School-home linkage

Forms of materials

Teacher manual – with accompanying professional development

Pupil Textbooks

Practice books – workbooks

Linked on-line materials – learning and assessment; enrichment and extension

Increasingly complex forms of digital material

The constructed line is perpendicular to AB, so it is called the **perpendicular bisector** of AB.

Constructing perpendiculars

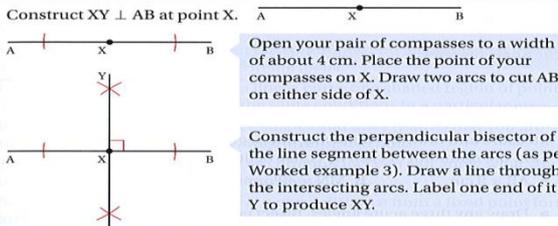
You can use your pair of compasses to construct:

- a line perpendicular to any point on a given line.
- a perpendicular line from a point above or below a given line.

Construct a perpendicular at a given point on a line

WORKED EXAMPLE 4

Construct $XY \perp AB$ at point X.



Open your pair of compasses to a width of about 4 cm. Place the point of your compasses on X. Draw two arcs to cut AB on either side of X.

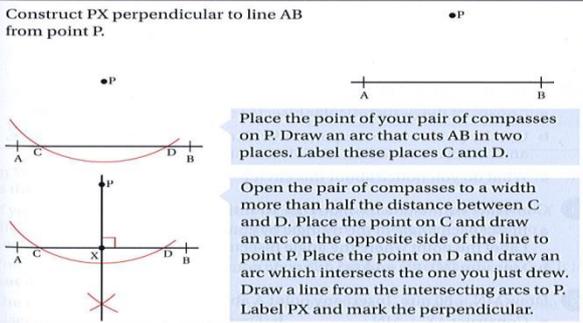
Construct the perpendicular bisector of the line segment between the arcs (as per Worked example 3). Draw a line through the intersecting arcs. Label one end of it Y to produce XY.

Construct a perpendicular from a point to a line

The shortest distance from any point to a line, is the perpendicular distance from the point to the line.

WORKED EXAMPLE 5

Construct PX perpendicular to line AB from point P.



Place the point of your pair of compasses on P. Draw an arc that cuts AB in two places. Label these places C and D.

Open the pair of compasses to a width more than half the distance between C and D. Place the point on C and draw an arc on the opposite side of the line to point P. Place the point on D and draw an arc which intersects the one you just drew. Draw a line from the intersecting arcs to P. Label PX and mark the perpendicular.



Key vocabulary

perpendicular bisector: a line perpendicular to another that also cuts it in half.



Tip

Remember perpendicular means 'at right angles to'.



Tip

Remember the symbol \perp means 'perpendicular to'; see Chapter 5 if you need to.

Cambridge Approach to Textbooks



<http://www.cambridgeassessment.org.uk/Images/cambridge-approach-to-textbooks.pdf>



Foci for public policy

Quality criteria

Allied professional development

Market relations and sustainability – private-public relationship

Supporting curriculum reform and pedagogic innovation

Incorporating publishers' schedules into reform policy