

## THE CURRICULUM

**Phil Budgell**

*Education Leadership Consultancy (UK)*

**Abstract.** It is proposed that respect for **agency** and **choice** for the pupils is a priority of education. Three frameworks are presented that can be used to make sense of the curriculum:

- the **Entitlement Curriculum**;
- the **Aims and Objectives Curriculum**; and
- the **Areas of Learning Curriculum**.

It is suggested that only the **Subject Strands** components of the Areas of Learning Curriculum are used by ministries of education in planning their national curricula.

It is then proposed that ministries of education should delegate responsibility for the curriculum to **Curriculum, Assessment and Qualifications Agencies** – a non-ministerial departments that report directly to Parliament. **Curriculum Notation** is then introduced as a technique for:

- mapping the introduction of agency and choice in the curriculum as pupils mature; and
- constructing **Intervening Performance Indicators**.

**Literacy** and **Numeracy** are introduced as compulsory elements in the curriculum of older pupils – independent of the subjects that the pupils are studying. Finally, it is proposed that it is the schools' responsibility to ensure that:

- **Cross-curricular Skills**; and
  - **Thinking Skills and Personal Capabilities**
- are part of the pupils' classroom experience.

*Keywords:* curriculum; skills; personal capabilities; assessment; subject

### Introduction

“Education should be a means to empower children and adults alike to become active participants in the transformation of their societies. Learning should also focus on the values, attitudes and behaviours which enable individuals to learn to live together in a world characterized by diversity and pluralism”, UNESCO (2017).

“Is the primary purpose of school to benefit the individual or the collective society? The problems in modern pedagogy reflect a largely unrecognized

philosophical opposition between the idea that education should build up of the capacity of the individual and the belief that it should train the individual to meet societal goals” Hargadon (2015).

“The only reason why we teach reading, writing, arithmetic, etc., is because they are common languages that enable us to create a better lived experience for humanity” Shapiro (2014).

Is Shapiro saying:

– “we’re going to empower the individual to become smarter, more capable of thinking clearly, and to have the tools of industry, and then they will create their own lived experiences”, or

– “we need citizens with a certain set of skills so that when we tell them what we think they should do, they are able to do it”?

It can only be the former, education cannot really be primarily about community needs. It’s about how individuals become more intellectually capable, and then are able to work together with other people and build the community. The priority of education is respect for the **agency** and **choice** of the individual.

Schools need to be basic structures in which freedom operates; freedom for pupils and teachers to **innovate** and **disagree**. For a healthy society, pupils and

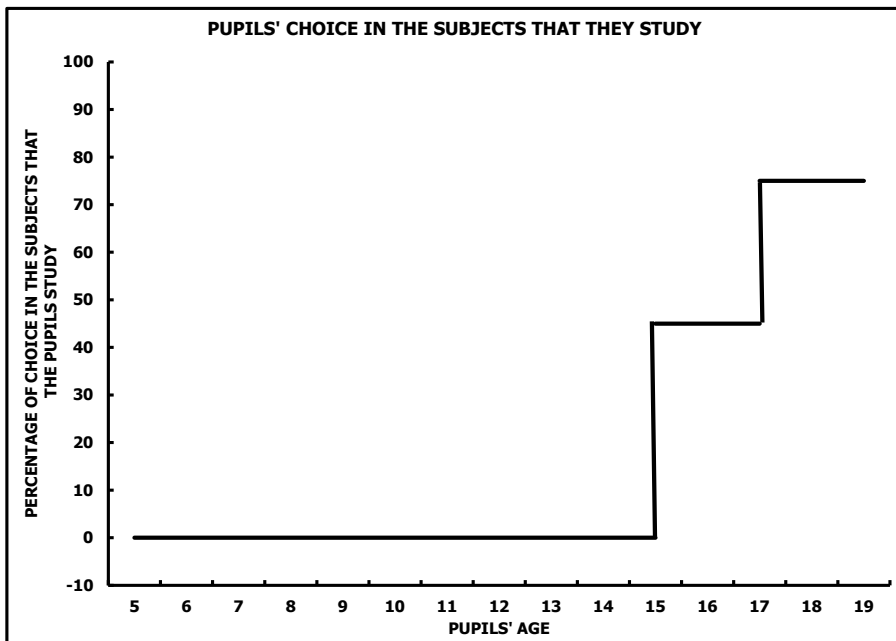


Figure 1. Pupils' choice in the subjects they study

teachers need to be able to **think** independently and to **question** predominant ideas. If schools are really preparing pupils to be vibrant actors in a democratic society, there should be many more real opportunities for them to practise that democratic governance and decision-making. Having **agency** and **choice** as a pupil is essential not only because every person is inherently and uniquely valuable, but also because democratic systems of governance depend on voluntary participation by thoughtful people (Budgell & Kunchev 2019).

In reality, for the pupils, the school is the embodiment of the education system which, in turn, is the embodiment of the state. As the pupils become older, therefore, the whole system must ensure that the **curriculum** is structured and organized in such a way that the pupils have a choice of subjects and modules that they wish to study. The **curriculum** must provide sufficient breadth and balance while enabling pupils, as they mature, to exercise increasing choice of the subjects that they wish to study.

### **Curriculum frameworks**

There are a number of frameworks that are used to describe and interpret the curriculum;

for example:

- A. The Entitlement Curriculum;
- B. The Aims and Objectives Curriculum; or
- C. Areas of Learning Curriculum.

#### **A. The Entitlement Curriculum:**

- is balanced and broadly based;
- promotes the spiritual, emotional, moral, cultural, intellectual and physical development of pupils at the school and of society;
- prepares pupils for the opportunities, responsibilities and experiences of life by equipping them with appropriate knowledge, understanding and skills; and
- empowers young people to achieve their potential and to make informed and responsible decisions throughout their lives.

#### **B. The Aims and Objectives Curriculum:**

- an overarching curriculum aim;
- curriculum objectives;
- access to learning experiences;
- the development of attitudes and dispositions.

#### **C. Areas of Learning Curriculum:**

##### **• Subject Strands:**

- mother-tongue language;
- modern foreign languages;
- mathematics;
- science and technology;

- information and communication technology;
- the humanities;
- the arts;
- physical education and sport, and
- social and civic literacy.

• **Cross-curricular Skills:**

- communication
- literacy
- numeracy
- using ICT.

• **Thinking Skills and Personal Capabilities:**

managing information

- thinking, problem-solving and decision-making
- being creative
- working with others
- initiative and entrepreneurship
- self-management.

However, as often, there is a huge discontinuity between the theory and practice. It is very rare for any ministry of education to draw upon either **The Entitlement Curriculum** or **The Aims and Objectives Curriculum** in the development of a national curriculum. Most frequently, they rely solely on the **Areas of Learning Curriculum**; but even then, they:

- concentrate on **Subject Strands**;
- focus on using ICT as a **Cross-curricular Skill**; but ignore communication, literacy and numeracy; and
- make little, other than passing reference, to **Thinking Skills and Personal Capabilities**.

### **Planning and organising the curriculum**

#### ***The state's role in determining the curriculum framework***

Because it must provide pupils with the opportunity to choose the subjects that they wish to study as they mature, the **Curriculum Framework** needs to be determined at a national level. However, this need not be determined directly by the Ministry of Education. It could, and probably should, be determined by a **Curriculum, Assessment and Qualifications Agency** – a non-ministerial department that reports directly to Parliament.

There are at least three aspects to planning and organising the curriculum.

- The State, through the **Curriculum, Assessment and Qualifications Agency**, should determine the **Curriculum Framework** that will provide pupils with the opportunity to choose the subjects that they wish to study as they mature.

– Because the curriculum for older pupils is driven by external qualifications, the **Curriculum, Assessment and Qualifications Agency** should specify in detail both:

- the **content**, and
- the **assessment and accreditation requirements** of all subjects taught in schools.

Therefore, the **Curriculum, Assessment and Qualifications Agency** must ensure that the subject conditions and requirements:

- specify in detail the content of the subjects being studied;
- form an effective introduction to university education in that subject; and
- prepare pupils for life after school.

### **Curriculum content**

For all subjects, the **Curriculum, Assessment and Qualifications Agency** must, therefore, ensure that the level specifications set out the knowledge, understanding and skills in terms of their:

- Purpose;
- Aims and Objectives;
- Overarching Themes; and
- Detailed Subject Content.

The requirements for any subject studied to an advanced level must:

– define and assess achievement of the knowledge, skills and understanding which will be needed by pupils planning to progress to undergraduate study at a higher education establishment, particularly (although not only) in the same subject area;

- set out a robust and internationally comparable post-16 academic course of study to develop that knowledge, skills and understanding;
- permit universities to accurately identify the level of attainment of pupils;
- provide a basis for school and college accountability measures at age 19; and
- provide a benchmark of academic ability for employers.

### **The role of the curriculum, assessment and qualifications agency in specifying the overall requirements of the curriculum for older pupils (for example, mathematics)**

The level specifications set out the knowledge, understanding and skills in mathematics in terms of their:

- Purpose;
- Aims and Objectives;
- Overarching Themes;
- Content; and
- Detailed Subject Content.

**Table 1.** The Purpose of all Subjects Studied to an Advanced Level

<b>The Purpose of all Subjects Studied to an Advanced Level</b>
<ul style="list-style-type: none"><li>• define and assess achievement of the knowledge, skills and understanding which will be needed by pupils planning to progress to undergraduate study at a higher education establishment, particularly (although not only) in the same subject area;</li><li>• set out a robust and internationally comparable post-16 academic course of study to develop that knowledge, skills and understanding;</li><li>• permit universities to accurately identify the level of attainment of pupils; to provide a basis for school and college accountability measures at age 18; and provide a benchmark of academic ability for employers.</li></ul>

The specification in mathematics must require pupils to demonstrate the following overarching knowledge and skills. These must be applied, along with associated mathematical thinking and understanding, across the whole of the detailed content set out below.

**Table 2.** The Purpose of Mathematics

<b>The Purpose of Mathematics</b>
Advanced level mathematics provides a framework within which a large number of young people continue to study the subject. It supports their mathematical needs across a broad range of other subjects at this level and provides a basis for subsequent quantitative work in a very wide range of higher education courses and in employment.
Advanced level mathematics builds upon earlier work in mathematics and introduces calculus and its applications. It emphasises how mathematical ideas are interconnected and how mathematics can be applied to model situations mathematically using algebra and other representations; to help make sense of data; to understand the physical world and to solve problems in a variety of contexts, including social sciences and business. It prepares pupils for further study and employment in a wide range of disciplines involving the use of mathematics.

**Table 3.** Overarching Themes of Mathematics

<b>Overarching Themes of Mathematics</b>
Mathematical argument, language and proof
Mathematical problem solving
Mathematical modelling

### **Timetable structure**

There is no need for the **Curriculum, Assessment and Qualifications Agency** (on behalf of The State) to specify:

1. The number of periods during the week
2. The length of a period
3. The number of pupils in each class
4. The balance of subjects across the week.

These decisions should be left to the individual Leadership Teams and Governing Bodies. The **Curriculum, Assessment and Qualifications Agency** need only specify:

- the number of teaching/learning hours during the week; for example, a minimum of 25 hours;
- and the percentage of free choice that pupils have as they get older; for example, 35% in Grades 9 and 10 and 80% in Grades 11 and 12.

**Table 4.** Alternative Models for the Structure of the Timetable

	<b>Model A</b>	<b>Model B</b>	<b>Model C</b>
<b>Form Period</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Bulgarian Language and Literature</b>	<b>5 lessons</b>	<b>5 lessons</b>	<b>3 lessons</b>
<b>Mathematics</b>	<b>5 lessons</b>	<b>5 lessons</b>	<b>3 lessons</b>
<b>Science</b>	<b>5 lessons</b>	<b>5 lessons</b>	<b>4 lessons</b>
<b>Information Technology</b>	<b>4 lessons</b>	<b>3 lessons</b>	<b>3 lessons</b>
<b>PE and Sport</b>	<b>3 lessons</b>	<b>2 lessons</b>	<b>2 lessons</b>
<b>Optional Subjects</b>	<b>3*4 lessons</b>	<b>3*3 lessons</b>	<b>3*3 lessons</b>
<b>TOTAL</b>	<b>35 lessons</b>	<b>30 lessons</b>	<b>25 lessons</b>

Table 4 illustrates three models for the allocation of lessons:

- a) in Model A there are 35 – 45-minute lessons;
- b) in Model B there are 30 – 50-minute lessons; but
- c) in Model C there are 25 – 60-minute lessons.

There could even be a 2-week timetable (Model D) in which there are 40 75-minute periods: the longer the individual lessons, the more likely the school will have to adopt a 2-week timetable. This decision should be delegated to the school leadership team; it is not necessary for the **Curriculum, Assessment and Qualifications Agency** to specify the structure of the timetable.

### **How the curriculum framework could change as pupils mature**

The priority of education is respect for the **agency** and **choice** of the individual. **Curriculum Notation** can be used to illustrate how the curriculum could be structured and organized so that the pupils have a choice in subjects that they wish to study as they mature.

### **Curriculum notation**

**Curriculum notation** provides a pictorial representation of the structure and organisation of the curriculum and timetable. It has fixed conventions that enable the school director, the inspector or the consultant to indicate:

- the number of pupils and tutor groups in each grade and the number of lessons in the timetable cycle, the number of pupils in each lesson and the number of lessons of each subject;

- whether pupils are taught in their tutor groups (no boxes);

- whether all the lessons in a particular subject are ‘blocked’ or taught at the same time (open boxes); enabling the lead teacher in each subject to set the pupils by ability, more able pupils being taught in larger classes; less able pupils are taught in smaller classes;

- whether extra teachers are allocated to create smaller groups (closed boxes);

- whether there is a choice of subject (closed boxes).

It is important to remember that what follows are examples, not centrally determined outcomes. The detail will be worked out by the individual school and will, therefore, vary from school to school.

When linked to the **Staff Deployment Analysis, Curriculum Notations** for all grades, provide important Intervening Performance Indicators (Budgell 2022a); e.g.;

- pupil/teacher ratio;

- percentage contact time;

- average class size.

### **Grade 7**

A broad and balanced curriculum should be compulsory for all pupils, for example:

- Form Period (FP), Bulgarian Language and Literature (BLL), Mathematics (Ma), Science (SC), Information Technology (IT), English (En) or German (Ge), History (Hi), Geography (Gg), Art (Ar), Music (Mu), Drama (Dr) and Physical Education (PE).

Table 5 exemplifies the **Curriculum Notation** for **Grade 7** in a community school:

- the number of pupils (156) and tutor groups (6) in each grade and the number of lessons in the timetable cycle (e.g., 30 lessons per week), the number of pupils in each lesson and the number of lessons of each subject;

- the Form Period, History, Geography, Art, Music and Drama are taught in the tutor groups (no boxes),

- Bulgarian Language and Literature, Mathematics and Science

- are ‘blocked’ or taught at the same time (open boxes); enabling the lead teacher in each subject to set the pupils by ability; more able pupils being taught in larger classes; less able pupils are taught in smaller classes;

- there are addition teachers in Information Technology and Physical Education to create smaller groups (closed boxes);

- in modern foreign languages, there is a choice of subject – English or German (closed boxes).



**Table 5. Curriculum Notation for Grade 7**

Comprehensive School 2021-2022 (Model B, 30 lesson week)															
Class	No	Grade 7													Support/ withdrawal
7A	26	FP <sup>26</sup>	BLL <sup>34</sup>	Ma <sup>34</sup>	Sc <sup>32</sup>	IT <sup>18</sup>	Ge <sup>29</sup>	Hi <sup>26</sup>	Gg <sup>26</sup>	Ar <sup>26</sup>	Mu <sup>26</sup>	Dr <sup>26</sup>	PE <sup>24</sup>		
		1				IT <sup>17</sup>			2	2	2	2	2	PE <sup>22</sup>	
7B	26	FP <sup>26</sup>	BLL <sup>32</sup>	Ma <sup>32</sup>	Sc <sup>31</sup>	IT <sup>17</sup>	En <sup>23</sup>	Hi <sup>26</sup>	Gg <sup>26</sup>	Ar <sup>26</sup>	Mu <sup>26</sup>	Dr <sup>26</sup>			
		1						2	3	2	2	2	2	2	PE <sup>22</sup>
7C	26	FP <sup>26</sup>	BLL <sup>32</sup>	Ma <sup>31</sup>	Sc <sup>30</sup>	IT <sup>18</sup>	Ge <sup>28</sup>	Hi <sup>26</sup>	Gg <sup>26</sup>	Ar <sup>26</sup>	Mu <sup>26</sup>	Dr <sup>26</sup>			
		1				IT <sup>17</sup>			2	2	2	2	2	PE <sup>22</sup>	
7D	26	FP <sup>26</sup>	BLL <sup>26</sup>	Ma <sup>31</sup>	Sc <sup>29</sup>	IT <sup>17</sup>	En <sup>24</sup>	Hi <sup>26</sup>	Gg <sup>26</sup>	Ar <sup>26</sup>	Mu <sup>26</sup>	Dr <sup>26</sup>			
		1						2	3	2	2	2	2	2	PE <sup>22</sup>
7E	26	FP <sup>26</sup>	BLL <sup>20</sup>	Ma <sup>18</sup>	Sc <sup>26</sup>	IT <sup>18</sup>	Ge <sup>26</sup>	Hi <sup>26</sup>	Gg <sup>26</sup>	Ar <sup>26</sup>	Mu <sup>26</sup>	Dr <sup>26</sup>			
		1				IT <sup>17</sup>			2	2	2	2	2	PE <sup>22</sup>	
7F	26	FP <sup>26</sup>	BLL <sup>12</sup>	Ma <sup>10</sup>	Sc <sup>20</sup>	IT <sup>17</sup>	En <sup>26</sup>	Hi <sup>26</sup>	Gg <sup>26</sup>	Ar <sup>26</sup>	Mu <sup>26</sup>	Dr <sup>26</sup>			
		1	4	4	4	2	2		2	2	2	2	2	PE <sup>22</sup>	3
Pupils		156													
Teacher Pds		183	6	24	24	24	18	12	12	12	12	12	12	21	183
Notes:															

## Grade 8

The curriculum will depend on whether immersion teaching in a Modern Foreign Language is continued in its current format; but it will still be unified for all pupils.

## Grades 9 and 10

In Grade 9, the element of choice is introduced – pupils can choose what to study for 35% curriculum time. There will be a Core Curriculum and a free choice of 3 or 4 Optional Subjects that the school offers.

The Optional Subjects will depend on the teachers' expertise and the pupil population, but could include:

- Academic Subjects

- Art, Drama, Music, Economics (Ec), Geography, History, English, German, Russian (Ru), Informatics (Inf) and Information Technology.

- Vocational Subjects

- Accountancy (Acc), Business Studies (BS), Electronic Systems (ES), Health and Social Care (HSC), Travel and Tourism (TT).

- Additional Support

- Bulgarian Language and Literature and Mathematics.

The range of subjects will depend on the size of the school: the bigger the school the wider the range of subjects. The school could also choose to bring Information Technology into the Compulsory Core and reduce the number of Option Blocks – but again, this is a school decision. At this stage, there are **Vocational Education** courses, there are no specific **Vocational Training** courses.

Table 6A exemplifies the **Curriculum Notation** for **Grade 10** in a high school: again, a school with 156 pupils and tutor groups in each grade, but with 35 lessons in the timetable cycle. In **Grade 10**:

- only the Form Period and Physical Education are taught in the tutor groups;
- Bulgarian Language and Literature, Mathematics and Science are ‘blocked’ and allocated an additional teacher; the lead teachers have also established very small groups for less able pupils with larger groups for the more able pupils;
- Information Technology is allocated two extra teachers and is half-grade blocked; there are 8 teaching groups but they are all about the same size;
- there are the four Option Blocks; at the end of **Grade 8** the pupils are asked to choose the four additional subjects (usually with one reserve) that they wish to study in **Grades 9 and 10**; timetabling software then arranges the subjects into the Option Blocks so that the maximum number of pupils can get their 4 choices (maybe with some having to study their reserve); obviously, all the subjects within an Option Block (a closed box) are taught at the same time;
- the low-attaining pupils in the bottom sets in Bulgarian Languages and Literature and in Mathematics can have additional lessons in Option Block 2 and Option Block 3.

The benefit of organising the Option Blocks this way is that it maximizes the pupils’ **agency** and **choice** and their decisions do not have to be made until the end of **Grade 8**, rather than the end of **Grade 7**.

However, it does not ensure breadth and balance:

- Pupil A could choose to study Art, English, German and Russian;
- Pupil B could choose to study Business Studies, Economics, Geography and History; while
- Pupil C could choose to study Accountancy, Business Studies, Informatics and have further support in Bulgarian Language and Literature; furthermore
- sometimes a small number of pupils may have to swap their fourth and fifth choices.

The real costs, however, are in the time and effort necessary to construct the Option Blocks and the timetable.

**Table 6A.** Curriculum Notation for Grades 9 and 10

High School 2021-2022 (Model A, 35 Lesson week)																
Form	No	Grades 9 and 10														Support/withdrawal
								Option Block 1	Option Block 2	Option Block 3	Option Block 4					
								1	2	3	4					
9A	26	FP	26	29	28	28	20	Dr	Dr	Ar	En					
				1	29	28	28	20	22	25	26	25				
9B	26	FP	26	1	29	28	28	20	3	Ge	En	Gg	Ru			
				1	24	26	26	19	3	Ge	Inf	24	26	16		
9C	26	FP	26	1	24	26	26	19	3	Ge	Inf	24	26	16		
				1	22	26	26	19	3	Hi	ES	19	21			
9D	26	FP	26	1	22	26	26	19	3	Hi	ES	19	21			
				1	20	24	24	20	3	BS	Acc	24	HSC	19	Ar	28
9E	26	FP	26	1	20	24	24	20	3	BS	Acc	24	HSC	19	Ar	28
				1	17	12	12	19	3	Gg	TT	24	BS	24	En	26
9F	26	FP	26	1	17	12	12	19	3	Gg	TT	24	BS	24	En	26
				1	15	10	10	19	3	En	Ma	10	Mu	20	BLL	15
					5	5	5	4	3	3	3	3				
Pupils	156															
Teacher Pds	283		35	35	35	24	18	32	36	36	32					283
Notes:																Total 283

Table 6B exemplifies an alternative strategy for compiling the Option Blocks. Everything else is the same as Table 6A, but in Table 6B, the Option Blocks are pre-formed. The school has constructed a Humanities Block, a Languages Block, an Arts Block and a Vocational Block: the pupils have to choose one subject from each block. In this model, the benefit lies in greater breadth and balance; pupils cannot choose four humanities courses, four languages courses or four vocational courses and the whole process is easier to manage for the school. The cost, however, is in pupils' **choice and agency**.

**Table 6B.** Curriculum Notation for Grades 9 and 10

Form		No	High School 2021-2022 (Model A, 35 Lesson week)																Support/ withdrawal				
			Grades 9 and 10																				
							Humanities Block				Languages Block				Arts Block				Vocational Block				
9A	26	FP	26	BLL	29	Ma	28	Sc	28	IT	20	PE	26	Gg	22	Ge	25	Dr	22	Inf	25		
				1	BLL	29	Ma	28	Sc	28	IT	20	3	Gg	22	Ge	25	Dr	26	Inf	25		
9B	26	FP	26	1	BLL	24	Ma	26	Sc	26	IT	19	PE	26	Hi	22	En	24	Ar	21	TT	21	
				1	BLL	22	Ma	26	Sc	26	IT	19	3	Hi	22	En	24	Ar	24	TT	21		
9C	26	FP	26	1	BLL	20	Ma	24	Sc	24	IT	20	PE	26	Ec	22	Ru	24	Ar	24	Acc	28	
				1	BLL	17	Ma	12	Sc	12	IT	19	3	BS	23	Ru	24	Mu	24	HSC	26		
9D	26	FP	26	1	BLL	15	Ma	10	Sc	10	IT	19	PE	26	BS	23	Ma	10	BLL	15	Sc	10	
				1	BLL	15	Ma	10	Sc	10	IT	19	3	BS	23	Ma	10	BLL	15	Sc	10		
				5	5	5	5	4					3	3	3	3	3	3	3				
Pupils				156																			
Teacher Pds				283	35	35	35	24	18	32	36	36	32										283
Notes:																					Total 283		

Pupils who do not wish to continue with an Academic Education after **Grade 10**, can leave their High School and transfer to a **Vocational (or Tertiary) College** where they can follow a programme of Vocational Education and Training (Budgell 2022b).

### Grades 11 and 12

Even greater choice is introduced at this stage; around 80% of curriculum time (Table 7). There will also be a Form Period, a programme of PE and Sports; in addition, there will be compulsory courses in **Literacy** and **Numeracy**. These will be distinct from the academic courses in Bulgarian Language and Literature and Mathematics. The pupils can then choose 4 from a wide range of advanced courses (5 lessons). Once more, the range of subjects will depend on the size of the school; the bigger the school the wider the range of subjects.

**Table 7.** Option Choices in Grades 11 and 12

<b>Bulgarian Language and Literature</b>	<b>Bulgarian Language</b>	<b>Bulgarian Literature</b>
<b>Mathematics</b>	<b>Further Mathematics</b>	<b>Physics</b>
<b>Chemistry</b>	<b>Biology</b>	<b>English</b>

<b>German</b>	<b>Russian</b>	<b>History</b>
<b>Geography</b>	<b>Geology</b>	<b>Sociology</b>
<b>Economics</b>	<b>Astronomy</b>	<b>Psychology</b>
<b>Information Technology</b>	<b>Informatics</b>	<b>Travel and Tourism</b>
<b>Accountancy</b>	<b>Business Studies</b>	<b>Electronic Systems</b>
<b>Health and Social Care</b>		

Table 8 exemplifies the **Curriculum Notation** for **Grades 11** and **12** in a high school: again, a school with 156 pupils and tutor groups in each grade, but with 30 lessons in the timetable cycle. In **Grades 10** and **12**:

- the Form Period (1 lesson), Physical Education (3 lessons), the Elements of Literacy (3 lessons), and the Elements of Numeracy (3 lessons) are taught in the tutor groups;

- then there are the four Option Blocks (5 lessons); at the end of **Grade 10** the pupils are asked to choose the four subjects that they wish to study in **Grades 11** and **12**; timetabling software then arranges the subjects into the Option Blocks so that the pupils can get their 4 choices; obviously, as above, all the subjects within an Option Block (a closed box) are taught at the same time;

- the low-attaining pupils will have transferred to a vocational college.

At this advanced level, there is no attempt to ensure breadth and balance:

- Pupil A could choose to study Mathematics, Further Mathematics, Physics and Chemistry;

- Pupil B could choose to study Bulgarian Language, Bulgarian Literature, German and Russian; while

- Pupil C could choose to study Accountancy, Business Studies, Informatics and Bulgarian Language and Literature;

The Option Blocks are organised to maximise pupils' **agency** and **choice**; and their decisions do not have to be made until the end of **Grade 10**; rather than the end of **Grade 7**.

Again, the annual cost to the school is in the time and effort necessary to construct the Option Blocks and the timetable; the short-term cost to the **Curriculum, Assessment and Qualifications Agency** will be the development of a wider range of examinations and teacher assessments in the Secondary School Diploma.

**Table 8.** Curriculum Notation for Grades 11 and 12

Gymnasium 2021-22 (Model C, 25 Lesson week)															
Year 12								Year 13							
Form	No.									Form	No.				
						Option Block 1	Option Block 2	Option Block 3	Option Block 4						
11A	26	FP	Lit	Num	PE	BLL	BLI	BLa	IT	12A	26	FP	Lit	Num	PE
		1	3	3	3	29	28	24	28			1	3	3	3
11B	26	FP	Lit	Num	PE	Ma	FM	HSC	Bi	12B	26	FP	Lit	Num	PE
		1	3	3	3	30	22	28	26			1	3	3	3
11C	26	FP	Lit	Num	PE	Ma	Ec	Ru	Mu	12C	26	FP	Lit	Num	PE
		1	3	3	3	22	24	22	21			1	3	3	3
11D	26	FP	Lit	Num	PE	Gg	Ch	Ph	Hi	12D	26	FP	Lit	Num	PE
		1	3	3	3	26	26	26	26			1	3	3	3
11E	26	FP	Lit	Num	PE	TT	So	Inf	Ps	12E	26	FP	Lit	Num	PE
		1	3	3	3	23	30	28	29			1	3	3	3
11F	26	FP	Lit	Num	PE	Ge	En	BS	ES	12F	26	FP	Lit	Num	PE
		1	3	3	3	26	26	28	26			1	3	3	3
Pupils		156	6	12	12	12	#	30	30	30	156	6	12	12	12
TOTAL		480													
Notes:															
														TOTAL	480

## Literacy and numeracy

To succeed in today's data-driven and interconnected world, it is essential that all pupils develop strong literacy and numeracy skills. Literacy and Numeracy are:

- life-long and active processes that begin at birth and develop throughout one's lifetime;

- foundational to successful living, learning and participating in today's society
- used to make decisions that impact one's life;
- the means through which students develop knowledge and understanding in each subject/discipline area; and

- a shared responsibility of all school educators in all subjects or disciplines

Literacy and numeracy are used every day when we interpret a utility bill, choose a mobile phone plan, answer an email, post a message on social media, figure out how much paint to buy, compare prices at the grocery store or interpret a political cartoon.

Literacy is critical in helping us make sense of our world. From the time we wake up to the time we go to sleep, we are constantly making meaning of the world around us. Literacy can be thought of as just reading and writing; however, the understanding of literacy must encompass much more. Literacy should be defined as *the ability, confidence and willingness to engage with language to acquire, construct and communicate meaning in all aspects of daily living*. Language must

be explained as a *socially and culturally constructed system of communication* (Hoggart 1957), Deller (1997) and Bulajic, Despotovic and Lachmann (2019), Alberta Education (2022).

Numeracy is critical for the interpretation of a data-driven world. Numeracy should be defined as *the ability, confidence and willingness to engage with quantitative and spatial information to make informed decisions in all aspects of daily living. Everyday life presents quantitative or spatial information that needs to be interpreted and used* (Reichmamm 1973), Paulus (2001), Ellenberg (2014) and Brooks (2021), Alberta Education (2022).

**Table 9.** The Elements of Literacy

<b>Literacy</b> is the ability, confidence and willingness to engage with language* to acquire, construct and communicate meaning in all aspects of daily living. * Language is a socially and culturally constructed system of communication	
Component	Elements
<b>Literacy Awareness</b>	<b>Importance of Literacy:</b> pupils recognize that literacy provides enjoyment and enables them to make sense of and participate in the world around them.
	<b>Learner Awareness:</b> pupils identify what they know, are able to do and need to learn when engaging in tasks that involve literacy.
	<b>Task Awareness:</b> pupils are aware of the literacy demands within a task.
Component	Elements
<b>Literacy Knowledge and Understanding</b>	<b>Rules of Language:</b> pupils use rules of language to acquire, construct and communicate meaning. Acquire Information
	<b>Acquire Information:</b> pupils use efficient and effective strategies to acquire, evaluate and ethically use information.
	<b>Construct Meaning:</b> pupils use efficient and effective strategies to construct meaning. Communicate
	<b>Communicate Meaning:</b> pupils communicate to convey concepts, ideas and understandings.

**Table 10.** The Elements of Numeracy

<b>Numeracy</b> is the ability, confidence and willingness to engage with quantitative* or spatial** information to make informed decisions in all aspects of daily living. * Quantitative information is information that can be measured and expressed as an amount. ** Spatial information is the physical location of objects or people, or the relationship between objects or people.
---

Component	Elements
Numeracy Awareness	<b>Importance of Numeracy:</b> pupils recognize that numeracy enables people to make informed decisions in all aspects of daily living.
	<b>Learner Awareness:</b> pupils identify what they know, are able to do and need to learn when engaging in tasks that involve numeracy.
	<b>Task Awareness:</b> pupils are aware of the numeracy demands within a task.
Component	Elements
Numeracy Knowledge and Understanding	<b>Quantitative Information:</b> pupils apply knowledge of quantitative information to make an informed decision. Spatial Information
	<b>Spatial Information:</b> pupils apply knowledge of spatial information to make an informed decision.
	<b>Interpret, Represent and Communicate:</b> pupils interpret, represent and communicate in a variety of digital and non-digital formats to support decisions in situations involving numeracy.
	<b>Strategies, Methods and Tools:</b> pupils use efficient and effective strategies, methods or tools to manage quantitative or spatial information.

### Teachers' planning of the content, teaching and assessment of the curriculum

Within **The School**, the teachers need to plan in detail how and when they are going to organise the content, the teaching and the assessment of the curriculum in their subject. They will need to plan beyond the **Subject Strands**; they will need to ensure that:

- **Cross-curricular Skills:**
    - communication;
    - literacy;
    - numeracy;
    - using ICT;
  - and
  - **Thinking Skills and Personal Capabilities:**
    - managing information;
    - thinking, problem-solving and decision-making;
    - being creative;
    - working with others;
    - initiative and entrepreneurship;
    - self-management;
- are built into the classroom experience of the pupils.



**The School** is then responsible for:

- informing the Governors, parents and pupils, in detail, about the structure and organisation of curriculum; and
- presenting to Governors, parents and pupils the results of any evaluation of the pupils' performance in internal and external examinations.

### **Endnote**

#### ***Assessment and accreditation***

The **Curriculum, Assessment and Qualifications Agency** will need to decide whether there should be a formal assessment of the pupils' standards of achievement at the end of **Grade 10** and **Grade 12**. Then, in order to both:

- increase **Agency** and **Choice**; and
- improve **Breadth and Balance**

it will need to establish the level specifications that set out the knowledge, understanding and skills of a wider range of subjects [maybe at both a basic (**Grade 10**) and an advanced level (**Grade 12**)] in terms of their:

- Purpose;
- Aims and Objectives;
- Overarching Themes;
- Content; and
- Detailed Subject Content;

This could be achieved by:

- dividing some courses currently available and increasing the breadth and depth of the new 'single' subjects, e.g.;
- Bulgarian Language and Literature could be taught and examined as one or two subjects,
- Chemistry and Environmental Science could be taught and examined as two subjects,
- Physics and Astronomy could be taught and examined as two subjects,
- Geography and Economics could be taught and examined as two subjects;
- establishing new academic courses, e.g.;
- Further Mathematics,
- Biology,
- Philosophy,
- Psychology,
- Sociology; and
- establishing new vocational courses, e.g.;
- Business Studies,
- Electronic Systems,
- Health and Social Care,
- Informatics,

- Information Technology,
- Travel and Tourism.

## REFERENCES

- ALBERTA EDUCATION, 2022. [www.alberta.canada.ca/literacy\\_and\\_numeracy](http://www.alberta.canada.ca/literacy_and_numeracy)
- BROOKS, M., 2021. *How Mathematics Created Civilisation*. London, England: Scribe
- BUDGELL, P., 2022a. *Key Performance Indicators*. Sofia: “Az-buki” Education and Scientific Policies (Submitted for publication)
- BUDGELL, P., 2022b. *Alternative Approaches to Vocational Education and Training – Part 2*. Sofia: “Az-buki” Vocational Education (Submitted for publication)
- BUDGELL, P. and KUNCHEV, M., 2019. *General Theory of Education*. Annual Professional Development Meeting for Teachers and Principals. Plovdiv, America for Bulgaria Foundation.
- BULAJIC, A., DESPOTOVIC, M. and LACHMANN, T., 2019. Understanding functional illiteracy from a policy, adult education, and cognition point of view: Towards a joint referent framework. *Zeitschrift für Neuropsychologie* **30**(2), 109 – 122.
- DELLER, J., 1999. *The Uses of Literacy*. London, England: Book Works
- ELLENBERG, J., 2014. *How not to be Wrong, The Hidden Maths of Everyday Life*. London, England: Penguin
- HARGADON, S., 2015. *Using Education to Serve the Individual*. [www.getacclaim.com](http://www.getacclaim.com)
- HOGGART, R., 2009. *The Uses of Literacy*. London, England: Penguin.
- PAULUS, J., 2001. *Innumeracy: Mathematical Illiteracy and Its Consequences*. Washington, USA: Turtleback Books
- REICHMANN, W. J., 1973. *Use and Abuse of Statistics*. London, England: Penguin
- SHAPIRO, J., 2014. *Using the education system to create the world we want*. [www.getacclaim.com](http://www.getacclaim.com)
- UNESCO, 2017. *Learning to Live Together: The Role of Education*.

✉ **Dr. Phil Budgell**

Principal Consultant

Education Leadership Consultancy

Sheffield, United Kingdom

E-mail: [phil.budgell@btinternet.com](mailto:phil.budgell@btinternet.com)