



UKPHR

Public Health Register

Protecting the public – improving practice

UKPHR 2018 Specialist Registration by Portfolio Assessment competencies and how they relate to the 2015 Public Health Speciality Training Curriculum

Mapping documents

September 2018

1. Context

The 2018 UKPHR competencies are derived from the 2015 Public Health Speciality Training Curriculum (2015 Curriculum), taking into account the extensive UKPHR experience of assessing retrospective portfolios. This document maps between the 2015 Curriculum and the 2018 UKPHR competencies with a commentary on why there are differences.

The 2018 UKPHR Show How competencies and pre-application documents reflect the full level of achievement of the 2015 Curriculum key areas. Applicants are expected to meet all the 2018 UKPHR competencies in full, and also the competencies in Key Area 10 of integration and application of competencies for consultant practice. The aim of Key Area 10 states *“The knowledge base for key area 10 builds on the combined knowledge base for all the other key areas, since the emphasis is on the ability to select appropriately from the learning gained in other key areas, integrate that knowledge and skills to practise public health at a senior organisational level, making an effective personal impact.”* All UKPHR applicants are expected to be working at this level and must demonstrate this level at the time of application as well as across their whole portfolio. UKPHR’s registration process is not a developmental process, unlike the formal training route.

Given the experience of retrospective portfolio assessment of UKPHR over the years, some of the 2015 Learning Outcomes and knowledge base were redrafted and guidance drafted by experienced assessors. This is due to a number of reasons. So, the following should be noted:

- Recognition that this is retrospective assessment of a portfolio at a point in time not prospective over five years as in the formal Public Health training scheme. The latter training is a developmental process, and competence builds over those years. This means that the 2015 Curriculum learning outcomes are sometimes revisited or required to be demonstrated in different contexts during the training period. UKPHR requires applicants to show their retrospective evidence at one point in time i.e. at the time of submission of portfolio.
- The UKPHR 2018 competencies are written to meet the 2015 Curriculum at the full level of achievement without redundancy or repetition to ease retrospective assessment. As UKPHR does not involve face to face discussion with the applicants, some of the competencies have been rewritten to be clear as possible to minimise any potential confusion.
- Virtually all of the elements of the 2015 curriculum are matched to the 2018 UKPHR competency directly or indirectly and made explicit in the accompanying guidance. 2015 LO 6.9 has no match, but UKPHR expects applicant to demonstrate their competence to deal with health protection issues immediately through the other competencies, rather than specifically being out of hours.
- Some of the 2015 Curriculum learning outcomes are mapped to the pre-application documentation or the UKPHR Know Hows competencies rather than the UKPHR Show How competencies, as indicated in the relevant list below. The 2015 Curriculum key area 10 is included in the pre-application documents or in the other nine UKPHR key areas.
- Some of the 2015 Curriculum elements have been grouped both within the same key area and in some from differing key areas so they are assessed together and once only.

The knowledge competencies are derived from the 2015 Curriculum knowledge base across the key areas, with some detail from the FPH Part A syllabus. The 2015 Curriculum knowledge base were initially agreed for use by the UKPHR Board. These have been amended by a group of experienced UKPHR specialist registration assessors for the reasons given above and below.

- These are to be specifically assessed and thus require evidence from the applicant for each of these. This is different to the GMC CESR.
- Lack of detail in the 2015 Curriculum has meant using detail from Part A syllabus in places
- In reading the 2015 Curriculum knowledge base listed here the order of the text is changed in some places.
- Where the UKPHR 2018 competency includes meaning / text from the 2015 curriculum elsewhere this is cited in the comments column. *Guidance for applicants is in italics.*
- UKPHR's Board decided to not include any specific issues such as mental wellbeing, however this has been included as relevant to that competency. Sustainability has been included in KH5.K as a concept to be considered but climate change has not.

The 2015 Curriculum knowledge base is replicated in full in the first column of the tables below.

Key Area 1 - Use of public health intelligence to survey and assess a population's health and well-being

2015 PH Curriculum Knowledge base	UKPHR 2018	Knowledge competency	Comment / Guidance
<p>Population collection of routine and ad hoc data; demography; life-tables; population projections; population structure and fertility, mortality and migration; the significance of demographic changes for the health of the population and its need for health and related services</p>	<p>KH1.A</p>	<p>The sources of and how to use data on demographic structure and demographic change and the significance of demographic changes for the health of the population and its need for health and related services.</p> <p>The sources, limitations and use of data on social determinants, including Social Deprivation indices.</p>	<p>Too long a list of separate items; so grouped into key concepts. Easier to make a claim for each clause.</p>
<p>Sources of routine mortality and morbidity data, including primary care data, collection and publication at international, national, regional and district levels; biases and artefacts in population data; Methods of classifying health and disease, appreciation of the importance of consistency in definitions and (public health) language. Methods used to measure health status; notification and registration systems; data linkage within and across datasets.</p>	<p>KH1.B</p>	<p>Methods of classifying health and disease, appreciation of the importance of consistency in definitions and (public health) language.</p> <p>Sources and uses of routine mortality and morbidity data, including primary care data, notification and disease registration data; and biases and artefacts in population data;</p> <p>Methods to measure health status, including subjective health status and health surveys.</p>	<p>Grouped and tidied.</p> <p><i>Linking data sets includes pseudonymisation.</i></p>

		The methods for linking data sets.	
Use of information for health service planning and evaluation; specification and uses of information systems; common measures of health service provision and usage; the uses of mathematical modelling techniques in health service planning; indices of needs for and outcome of services; the strengths, uses, interpretation and limitations of routine health information; use of information technology in the processing and analysis of health services information and in support of the provision of health care.	KH1.C	<p>Sources of data about health and other service use and provision e.g. housing, social care and provision, data for service planning; indices of needs for and outcome of services.</p> <p>The strengths, analysis, uses, interpretation and limitations of routine health information.</p>	<p>Many items and specificity so consolidated.</p> <p><i>Data could include HES data for hospital use and the journey of individuals through a service.</i></p>
Advanced techniques in surveillance and dissemination: Methods of trending and modelling health status. Linkage of data sets; Design of knowledge management systems for both data and research literature (libraries); The role of ICT in intelligence based and evidence-based decision support; Integration of clinical data systems and population-based	KH1.D	<p>Techniques and methods for the analysis of health data, including appropriate statistical analysis, trend analysis and modelling, the principles of surveillance and qualitative analysis.</p> <p>The methodology and uses of small area statistics.</p> <p>Strengths and weakness of different analytical techniques to describe and analyse health</p>	<p>A long list of quite specific items; so the most critical chosen. Advanced is unclear. Repetitions with other competencies ICT subsumed in other KH1 competencies. Linkage of data sets in KH1.B</p>

systems to reduce inequalities and improve health; Technical, legal and ethical issues relating to data security, disclosure and trust. Pseudonymisation		needs and health inequalities in different populations.	
Technical, legal and ethical issues relating to data security, disclosure and trust. Pseudonymisation	KH1.E	Legal and ethical and methodological issues around data security	Pseudonymisation in KH1.B
The role of information and intelligence in policy formulation and implementation, and in local clinical and public health practice			Subsumed in other competencies

Key Area 2 - Assessing the evidence of effectiveness of interventions, programmes and services intended to improve the health or wellbeing of individuals or populations

2015 PH Curriculum Knowledge base	UKPHR 2018	Knowledge competency	Comment / Guidance
Design and interpretation of studies: skills in the design of research studies; critical appraisal of published papers including the validity of the use of statistical techniques and the inferences drawn from them; ability to draw appropriate conclusions from quantitative and qualitative research.	KH2.A	Keep 2015 Curriculum original	
Screening: principles, methods, applications and organisation of screening for early detection, prevention, treatment and control of disease	KH2.B	Screening: principles, methods, applications, current organisation and management of screening for early detection, prevention, treatment and control of disease.	Current added to ensure contemporary knowledge. Includes relevant 2015 PH Curriculum text from Key Area 7

Key Area 3 - Policy and strategy development and implementation

2015 PH Curriculum Knowledge base	UKPHR 2018	Knowledge competency	Comment / Guidance
Theories of strategic planning.	KH3.A	Keep 2015 Curriculum original	
Principal approaches to policy formation, implementation and evaluation including the relevance of concepts of power, interests and ideology.	KH3.B	Keep 2015 Curriculum original	
Knowledge of major national and international policies and legislation relevant to public health including awareness of the roles of key domestic, bilateral and multilateral organisations.	KH3.C	Keep 2015 Curriculum original	
Methods of assessing the impact of policies on health.	KH3.D	Keep 2015 Curriculum original	

Key Area 4 - Strategic leadership and collaborative working for health

2015 PH Curriculum Knowledge base	UKPHR 2018	Knowledge competency	Comment / Guidance
Understanding individuals, teams/groups and their development	KH4.A	Keep 2015 Curriculum original	
Motivation, creativity and innovation in individuals, and its relationship to group and team dynamics; personal management skills.	KH4.B	Keep 2015 Curriculum original	
Theories and models of management, leadership and delegation; principles of negotiation and influencing; principles.	KH4.C	Theories and models of effective management, leadership and delegation; principles of negotiation and influencing.	Principles deleted Effective added
Theories and methods of effective communication (written and oral) including mass communication.	KH4.D	Theories and methods of effective personal communication (written and oral).	See KH5.F for mass communication
The theoretical and practical aspects of power and authority, role and conflict.	KH4.E	Keep 2015 Curriculum original	
Understanding organisations, their function and structure: the internal and external organisational environments - evaluating internal resources and organisational capabilities	KH4.F	Understanding organisations, their differing functions, structures, cultures: the internal and external organisational environments - evaluating internal resources and organisational capabilities.	Included different organisational cultures
Identifying and managing internal and external stakeholder interests; structuring and managing inter-organisational (network) relationships, including inter-sectoral work and showing political awareness.	KH4.G	Keep 2015 Curriculum original	
Collaborative working practices and partnerships including social networks and communities of interest	KH4.H	Collaborative working practices and partnerships including social networks and communities of interest.	2015 original but split. Part into KH4.1

Assessing the impact of political, economic, socio-cultural, environmental and other external influences	KH4.I	How a range of external influences including political, economic, socio-cultural, environmental and other impact on collaborative working and partnership.	2015 original but split
Critical evaluation principles and frameworks for managing change;	KH4.J	Critical evaluation principles and frameworks for managing change in a multi-agency environment using negotiation, facilitation and influence.	Include bringing about change in a multi-agency environment using negotiation, facilitation and influence (Def Spec KH 30)
Issues underpinning design and implementation of performance management against goals and objectives.	KH4.K	Keep 2015 Curriculum original	
Understanding of the evidence underpinning the importance of mental wellbeing and how it impacts on effectiveness of organisations.	KH4.L	The evidence underpinning the importance of mental wellbeing and how it impacts on effectiveness of organisations.	

Key Area 5 - Health improvement, determinants of health and health communication

2015 PH Curriculum Knowledge base	UKPHR 2018	Knowledge competency	Comment / Guidance
Definitions of health (physical, mental and social).	KH5.A	Definitions and models of health and their application to population health.	“their application to population health” added for clarification
Determinants of health – including impact of ethnicity and culture on health outcomes, and the Prevention paradox Impact of culture on behaviour.	KH5.B	Determinants of health and wellbeing including the role of social, cultural and psychological factors.	Culture also see KH5.E Included PH Curriculum text from Key Area KH 8. <i>To include wider determinants e.g. economic, environmental, cultural; therapeutic determinants e.g. the relative contribution of health care interventions. Individual factors such psychological, biological or genetic factors. The role that individual perceptions of health and illness play in personal responsibility and control e.g. locus of control; sick role; self-efficacy.</i>
Risk reduction versus harm minimisation	KH5.C	Population aspects of prevention and reducing inequalities including the prevention paradox; primary, secondary and tertiary prevention including risk reduction and harm minimisation.	Drawing from 2015 PH curriculum text for KH5.B and KH7.A
Role of regulation, legislation and fiscal measure in promotion of health. Ethical and political issues underlying responsibility for health.	KH5.D	Theories and models of health promotion including role of different approaches in improving health including policy; legislation; environmental change. The ethical and political aspects of different approaches.	Drawing from 2015 PH curriculum text for KH5.E

Principles and practice of health promotion and education including models of behavioural change	KH5.E	Behaviour change models, theories and their application at an individual and population level for the promotion and protection of health and wellbeing.	Expanding on behaviour change includes social marketing 2015 PH curriculum text for KH5.F, KH6.B <i>Models and theories drawn from psychology, economics; including social marketing.</i>
Social marketing theory (diffusion of knowledge).	KH5.F	Mass communication theories and models including the effective use of different media for population health improvement and protection; including communication of risks to health.	Social Marketing Included in KH5.E – emphasis in this competency on mass media/health communication taken from KH4.D
Evaluation of health education activities including outcomes, appropriateness of different methods, limitations and strengths of RCT type and qualitative approaches.	KH5.G	Methods and approaches for the development and implementation of public health interventions and programmes including complex population health programmes taking whole system approaches or multi-level action.	Separate development/implementation from evaluation.
	KH5.H	Models and approaches for the evaluation of public health programmes including complex population health programmes taking whole system approaches or multi-level action.	
Theory and practice of community development. Strengths and weakness of community development approaches.	KH5.I	The principles and practice of community development and empowerment to promote health and reduce inequalities; strengths and weaknesses of different models and approaches; methods for assessing impact.	Social capital included in other relevant competencies. <i>To include the role of social capital.</i>
Practical problems of community development. Place of professional in community development.	KH5.J	Methods and approaches for listening to and engaging with communities to be involved and feedback in the development or evaluation of policy, strategy, programmes or services.	KH38 defined specialist content added. <i>Methods of listening e.g. focus groups; surveys; insight work and understanding of strengths and weaknesses of different</i>

			<i>approaches including participation ladder.</i>
Principles of sustainable development including the health co-benefits of climate change mitigation and adaptation	KH5.K	Principles of sustainable development and its relevance to population health.	

Key Area 6 - Health protection

2015 PH Curriculum Knowledge base	UKPHR 2018	Knowledge competency	Comment / Guidance
Epidemiology (including microbial epidemiology), and biology (including microbiology) of communicable diseases. Causes, distribution, natural history, clinical presentation, methods of diagnosis and control of infections of local and International public health importance.	KH6.A	Keep 2015 Curriculum original	
Health and social behaviour: in relation to risk of infectious and environmental diseases.	KH6.B	Keep 2015 Curriculum original	
Environmental determinants of disease and their control	KH6.C	Environmental determinants of disease and their control.	2015 original but split
Risk and hazard <i>identification</i> ; environmental monitoring; health impact assessment for potential environmental hazards,	KH6.D	Risk and hazard <i>identification</i> ; environmental monitoring and health impact assessment for potential environmental hazards.	2015 original but split. Part moved to KH6.K
Occupation and health, factors affecting health and safety at work.	KH6.E	Occupation and health, factors affecting health and safety at work.	2015 original but split
Chemical incident management.	KH6.F	Principles of the current public health aspects of emergency planning and managing environmental/chemical and radiological incidents including the roles and legal responsibilities of people and organisations involved in protecting the population's health and well-being.	Expanded to include wider range of incidents and responsibilities Current added to ensure contemporary knowledge.
Communicable disease: definitions, surveillance; methods of control	KH6.G	Keep 2015 Curriculum original	
The design, evaluation, and management of immunisation programmes.	KH6.H	The design, evaluation, and management of current immunisation programmes.	Current added to ensure contemporary knowledge.

Outbreak investigation including the use of relevant epidemiological methods	KH6.I	Current outbreak investigation including the use of relevant epidemiological methods.	Current added to ensure contemporary knowledge.
Organisation of infection control	KH6.J	Current organisation of infection control.	Current added to ensure contemporary knowledge.
National and international public health legislation and its application.	KH6.K	Current national and international public health legislation and its application. Current legislation in environmental control and international aspects of hazard control.	Part of 2015 PH curriculum text at KH6.C moved here. Current added to ensure contemporary knowledge.
Development, commissioning and evaluation of the services required for protecting health, including sexual health, TB, immunisations, infection control, antibiotic resistance, occupational health, travel health and screening and the need for services in particular settings and in high risk groups (e.g. prisons, with asylum seekers, in dental health).	KH6.L	Development, commissioning and evaluation of the current services required for protecting health, including a range of the following: sexual health, TB, immunisations, infection control, antibiotic resistance, occupational health, travel health and screening and the need for services in particular settings and in high risk groups (e.g. prisons, with asylum seekers, in dental health).	Not all of them so a range added. Current added to ensure contemporary knowledge.

Key Area 7 - Health and Care Public Health

2015 PH Curriculum Knowledge base	UKPHR 2018	Knowledge competency	Comment / Guidance
Research methods appropriate to public health practice, including epidemiology, statistical methods, and other methods of enquiry including qualitative research methods			Moved to KH8.A Is the title of Part A syllabus section 1
Disease causation and the diagnostic process in relation to public health; prevention and health promotion.	KH7.A	Disease causation and the diagnostic process in relation to public health.	The title of Part A syllabus section 2 <i>All references to public health include health improvement, health protection, health care public health care and wider determinants of health.</i>
Health information and audit methodology.	KH7.B	Audit methodology applied to public health.	KH 1 competencies include use of health information so health information deleted
Medical sociology, social policy, and health economics.			Split into 3. Medical sociology subsumed in key area 5.
	KH7.C	Current social and health policies and the implications for equality and equity in public health practice.	Current added to ensure contemporary knowledge
	KH7.D	Health economics and its application in the allocation of health and care services to individuals and groups.	Guidance from FPH Part A syllabus <i>Principles of health economics including: the notions of scarcity, supply and demand, distinctions between need and demand, opportunity cost, discounting, time</i>

			<i>horizons, margins, efficiency and equity; the role of economic evaluation in health care and Public Health interventions.</i>
Organisation and management of health care and health care programmes from a public health perspective	KH7.E	Keep 2015 Curriculum original	Part A syllabus section 5 title
Structure of health systems	KH7.F	Current models of health and care systems and their application in the delivery of health and care.	Widened. Also maps to 2015 LO 7.3 Current added to ensure contemporary knowledge
Pathways for service integration	KH7.G	Current service integration across health and social care including pathways for service integration.	Clarification Current added to ensure contemporary knowledge.
Principles, assessment, organisation and management of screening programmes			See KH2.B which also addresses screening. Evidence base for screening in SH2c
Ethical and legal frameworks.	KH7.H	Principles and theories of ethics in public health practice including resource allocation.	Legal frameworks moved to KH6.K KH8.6 incl. research ethics so deleted here KH9 incl. ethics of good working practice so theory here
Patient safety. and risk management	KH7.I	Risk management, including patient safety and clinical governance.	Is title of Part A syllabus section 5.5.4
Clinical Governance			Included in KH7.J

Key Area 8 – Academic public health

2015 PH Curriculum Knowledge base	UKPHR 2018	Knowledge competency	Guidance
Epidemiology, statistics, economic evaluation and qualitative research methods.	KH8.A	Epidemiology in relation to the delivery of public health practice.	
	KH8.B	Statistics and statistical methods and their application to public health practice including the relative importance of determinants of disease in terms of avoidable, relative and absolute risk.	
	KH8.C	Quantitative research methods of enquiry used in public health practice.	
	KH8.D	Qualitative research methods of enquiry used in public health practice.	
Social and health psychological sciences.			See KH5.B, KH5.E in determinants and behaviour change
Biological, social, environmental and therapeutic determinants of health and disease.			See KH5.B
Mechanism of therapeutic interventions, including complex interventions			See KH5.B, KH6.A, KH6.L, KH7.E, KH7.G i.e. in PH programmes, disease causation etc.
Educational theory,	KH8.E	Educational theory and facilitating learning including principles of setting learning objectives, curriculum development, planning and developing training, course and programme evaluation and student assessment.	
Research governance, research ethics, confidentiality and privacy of personal data.	KH8.F	Keep 2015 Curriculum original	Confidentiality also in pre-application reference section 3.4 Pre-application form section 9

Key Area 9 – Professional, personal and ethical development

This area is included within the documentation for the pre-application process.

2015 PH Curriculum Knowledge base	
Evidence underpinning the importance of mental wellbeing and how it can be nurtured.	Indirectly in pre-application reference section 3.4
GMC Good Medical Practice (GMP) as applied to public health.	Within pre-application form section 9
UKPHR Code of Conduct.	Within pre-application form section 9
Ethics of public health practice	Subsumed within PH principles and values in pre-application form section 2.1 and 9
Cultural competence: One's own cultural identity and cultural competence & Key concepts and stages in developing cultural competence	Subsumed in: Pre-application section 2.1 Reference sections 3.3, 3.5
Patient safety	Pre-application reference section 3.4 Pre-application form section 9
Principles and practice of confidentiality.	Pre-application reference section 3.4 Pre-application form section 9
How to plan and undertake personal and professional development successfully, with reflective practice.	Pre-application reference section 3.4 Pre-application form section 9

2. 2015 Public Health Specialty Training Curriculum Learning Outcomes mapped to 2018 UKPHR Show How competencies

There are two lists mapping the two sets of competencies against each other. Please note the mapping includes mapping to the guidance for the UKPHR competencies. Some are mapped to the pre-application documentation and to the UKPHR Know Hows, as indicated below. So, please refer to the full UKPHR 2018 Show How and Know How competencies and pre-application documentation for this detail. The one unmatched competency will remain under review by UKPHR.

2015 PH Curriculum Learning Outcome	2018 UKPHR Show How Competency
1.1	1.C, 8.C
1.2	6.A
1.3	1.A, 5.C
1.4	1.A
1.5	1.D
1.6	1.B
1.7	1.C
1.8	1.E
2.1	2.A
2.2	2.B
2.3	4.A, 4.C
2.4	2.A, 2.B, 8.B
2.5	2.A, 8.A
2.6	2.C
2.7	2.B, 5.A
3.1	3.A
3.2	3.B, 3.C
3.3	3.A
3.4	4.B
3.5	3.B
3.6	3.A, 9.D
3.7	3.C
4.1	4.E
4.2	4.F
4.3	9.F
4.4	4.A
4.5	4.D
4.6	Pre-application
4.7	9.D
4.8	4.C
4.9	4.G
4.10	4.D, 9.B, Pre-application
4.11	9.B, Pre-application
5.1	3.B
5.2	5.D
5.3	5.C
5.4	5.A
5.5	5.A
5.6	5.A

5.7	Know How 5.K
6.1	6.A
6.2	6.A
6.3	6.B
6.4	6.C
6.5	6.D
6.6	6.E
6.7	6.F
6.8	6.G
6.9	No match
7.1	2.C, 7.A
7.2	Know How 7.H
7.3	5.A, KH7.E, KH7.F
7.4	1.D, 4.D
7.5	7.C
7.6	7.A
7.7	5.B
7.8	7.B
8.1	1.B
8.2	1.A, 1.B, 1.C,
8.3	2.B, 8.C
8.4	8.A
8.5	8.B
8.6	8.A
8.7	8.A, 8.B, 8.C
8.8	4.F
8.9	8.D
9.1	9.C + Pre-application
9.2	9.A
9.3	Pre-application
9.4	9.B, Know How 4.L + Pre-application
9.5	Pre-application
9.6	Pre-application
9.7	Pre-application
9.8	9.B + Pre-application
9.9	4.F, 5.D
9.10	Pre-application + Across portfolio
9.11	Pre-application
10.1	Pre-application
10.2	2.B
10.3	2.B
10.4	2.B, 8.C
10.5	4.A + Pre-application
10.6	4.F + Pre-application
10.7	4.C + Pre-application
10.8	9.B
10.9	4.C + Across portfolio
10.10	Pre-application + Across portfolio
10.11	9.D
10.12	Pre-application

3. UKPHR 2018 Show How Competencies mapped to PH Specialty Training Curriculum 2015 Key Area Learning Outcomes

Please note that a number of the 2015 Curriculum Learning Outcomes are within the 2018 UKPHR pre-application documents. See previous list for detail.

UKPHR 2018 Competency	2015 PH Curriculum Learning Outcome
1.A	1.3, 1.4 8.2
1.B	1.6, 8.1 8.2
1.C	1.1, 1.7 8.2
1.D	1.5, 7.4
1.E	1.8
2.A	2.1, 2.4, 2.5
2.B	2.2, 2.4, 2.7, 8.3, 10.2, 10.3, 10.4
2.C	2.6 7.1
3.A	3.1, 3.3, 3.6
3.B	3.2 , 3.5, 5.1
3.C	3.2, 3.7
4.A	2.3, 4.4, 10.5
4.B	3.4
4.C	2.3, 4.8, 10.7, 10.9
4.D	4.5, 4.10
4.E	4.1
4.F	4.2, 7.4, 9.9, 10.6
4.G	4.9
5.A	2.7, 5.4, 5.5, 5.6
5.B	7.7
5.B	1.3, 5.3
5.D	5.2, 9.9
6.A	1.2, 6.1, 6.2
6.B	6.3
6.C	6.4
6.D	6.5
6.E	6.6
6.F	6.7
6.G	6.8
7.A	7.6 7.1
7.B	7.8
7.C	7.5
8.A	2.5, 8.4, 8.7, 10.4 8.6
8.B	2.4, 8.5, 8.7
8.C	1.1, 8.7, 8.3, 10.4
8.D	8.9
9.A	9.2
9.B	4.10, 4.11, 9.8, 10.8
9.C	9.1
9.D	3.6, 4.3, 4.7, 10.11