

Scheme of work

Physical geography: Hot desert systems and landscapes

This resource is a scheme of work for our accredited AS and A-level Geography specifications (7036, 7037). This scheme of work is not exhaustive or prescriptive, it is designed to suggest activities and resources that you might find useful in your teaching.

3.1 Physical geography

Core topic

| Specification content | Subject-specific | Learning outcomes | Suggested learning | Resources |
|--------------------------------|--------------------------|---------------------------------------|-----------------------------|---|
| week number | develonment | | to differentiation and | |
| | | | extension activities) | |
| Week 1 | Use of key subject- | An overview of the concept and | Small group discussions | Introductory presentation on Natural |
| Systems in Physical | specific and technical | use of 'models' by geographers as | followed by feedback - what | <u>Systems</u> |
| geography | terminology. | simplifications of a complex world. | models used in geography do | |
| (If students have already | To identify | Understanding of the concept of | students know? | Website with simple summaries of a |
| studied the unit on Water | connections and | 'systems frameworks' as a type of | Students to draw and | number of <u>earth systems</u> |
| and Carbon cycles then they | interrelationships | model fundamental to most areas | annotate a model system to | |
| should revisit the | between different | of geographical understanding. | show the key elements of a | A summary of the <u>features of the</u> |
| unit on 'Systems in Physical | aspects of | Students will be able to identify, | system. | litnosphere |
| Geography'. Then return to | geography. | describe and explain the elements | Students to draw and | A summary of the <u>features of the</u> |
| the end of this section to | Constructing and | of geographical systems, including: | annotate a diagram of an | hydrosphere |
| introduce 'Deserts as natural | using systems and | stores/components | example of a positive | |
| systems'. If this is the first | models. | flows/connections | feedback system and a | A summary of the <u>features of the</u> |
| physical geography element | | - elements | | <u>cryosphere</u> |

3.1.2 Hot desert systems and landscapes

| studied, then complete an introductory lesson covering the 'systems in physical geography' material outlined in this section)Labelling and annotation of diagrams attributes - relationships.negative feedback system. Repeat group discussion to see if students can now think of any more examples of systems in geography.'More information on the cryosphere• Systems in physical geography: Systems concepts and their application to the development of desert landscapes - inputs, outputs, energy, stores/components, flows/transfers, positive/negative feedback, dynamic equilibrium attributes - relationships.Nore information on the cryosphereA summary of the features of the atmosphere• Systems in physical geography: Systems concepts of landform and landscape and how related landforms combine to form combine to form combine to form- attributes - relationships.Repeat group discussion to see if students can now think of any more examples of outputs - inputs - outputs - outputs - isolated systems - closed systems - closed systems - open systems.Students will understand systems as being in a state of dynamic equilibrium that includes: - positive feedback.More information on the cryosphere• The concepts of landform and landscape and how related landforms combine to form- stribuse - students will be able to identify, describe add cases stribuse - students will be able to identify the- Practice low-tariff exam questions to assess learning - peer assessment opportunity attribuses - positive feedback.• The concepts of landform and landscape and how related landforms combine to for | | | · · · · · · · · · · · · · · · · · · · | | |
|---|---|---|---|---|---|
| four major subsystems of the earth: - atmosphere - lithosphere - hydrosphere - biosphere. To understand that these are interlinked as a 'cascading system'. Desert as natural systems Students will be able to identify desert environments as open systems | studied, then complete an introductory lesson covering the 'systems in physical geography' material outlined in this section) Systems in physical geography: Systems concepts and their application to the development of desert landscapes – inputs, outputs, energy, stores/components, flows/transfers, positive/negative feedback, dynamic equilibrium. The concepts of landform and landscape and how related landforms combine to form characteristic landscapes. | Labelling and annotation of diagrams. Develop an understanding of the concept of 'landscape'. | attributes relationships. Students will be able to identify, describe and explain common characteristics of systems, including: boundaries inputs outputs flows. Students will understand systems that are classified as: isolated systems closed systems open systems. Students will understand systems as being in a state of dynamic equilibrium that includes: positive feedback negative feedback. Students will be able to identify the four major subsystems of the earth: atmosphere lithosphere biosphere. To understand that these are interlinked as a 'cascading system'. | negative feedback system. Repeat group discussion to see if students can now think of any more examples of systems in geography. Students to work in pairs/small groups to think of ways in which the 4 'spheres' are interlinked. To feedback and share ideas. Opportunity here for a short research task for interconnections. Practice low-tariff exam questions to assess learning – peer assessment opportunity. | More information on the cryosphere A summary of the <u>features of the</u> <u>atmosphere</u> An online <u>lesson activity</u> investigating connections in the atmosphere |

| | | Students will be able to identify the different elements of a desert system, including: - inputs - components/stores - transfers/flows - outputs. Students will be able to understand desert landscapes as being in dynamic equilibrium that includes: - positive feedback - negative feedback. | Construct and annotate a diagram to illustrate various elements of a desert as an open system. Paired/small group task to identify examples of positive and negative feedback in desert landscapes. Students to draw and annotate a diagram of an example of a positive or negative feedback in a desert landscape. | Some detail on <u>positive feedback system in</u> <u>a desert environment</u> |
|--|---|--|---|--|
| | | | Once all students have illustrated one example of feedback in a desert, there is the opportunity for individuals/small groups to research for others. | Images of desert landscapes Features of different deserts |
| | | Deserts as characteristic landscapes Students will all understand the concepts of: - landform - landscape. | Small group discussion to identify prior knowledge of desert landforms. | |
| | | Students will appreciate that characteristic desert landscapes are the combination of related | Discuss what represents a characteristic desert landscape. | |
| | | landforms. | (Specific landforms and landscapes are studied in detail later). | |
| Week 1-2 Deserts as natural systems The global distribution of | Use of key subject- specific and technical terminology. | Students will be able to describe and explain the distribution of mid and low latitude deserts and their | Q&A/discussion – to assess prior knowledge - where are hot deserts located? | Simple <u>introduction to deserts</u> and their distribution |
| mid and low latitude | Opportunities to | margins, including: | Draw and annotate world | some <u>background to deserts</u> |

| • () • () • 1 • 1 • 1 • 1 • 1 | deserts and their margins (arid and semi-arid). Characteristics of hot desert environments and their margins: climate, soils and vegetation (and their interaction) Water balance and aridity index. The causes of aridity: atmospheric processes relating to pressure, winds, continentality, | develop skills such as drawing, labelling and annotating diagrams. Opportunities to engage with a range of maps. Develop an understanding of water budgets and aridity index. Handling primary and | arid regions semi-arid regions. Students will understand the water balance and aridity index. Students will develop an understanding of the features and interaction of characteristics of hot deserts, including: climate, including precipitation and temperature soils, including characteristics and formation of | map to identify hot desert regions – produce accompanying notes to explain this distribution. Discussion to refer back to the idea of water balance from the Water and Carbon unit. Students to research the aridity index. Possible discussion Q – What are the reasons for aridity in | Detail of distribution of different <u>categories of deserts</u> More <u>background on deserts</u> , including aridity index Some excellent <u>images and summary</u> introductory material Detailed text on causes of aridity <u>1</u> . Detailed text on causes of aridity <u>2</u> . Detailed text on causes of aridity <u>3</u> . Detailed text on causes of aridity <u>4</u> . |
|---|--|--|--|--|--|
| | relief and cold ocean currents. | secondary sources of data. Online research. Constructing and interpreting a range of graphical and statistical techniques – including climate graphs. Opportunity to apply systems theory to identify the inputs, processes, and outputs operating in hot deserts. | Vegetation, including characteristics, adaptations. Students will understand and be able to describe, explain and analyse the causes of aridity, including: the general pattern of atmospheric circulation distance from oceans or continentality relief cold ocean currents. | deserts? Paired research/discussion to find out and explain the extreme temperatures experienced in some hot deserts and the large diurnal range. Opportunity to construct, describe, analyse and explain climate graphs for hot desert areas. Students to research a desert soil(s). Opportunity to sketch a soil profile of a typical desert soil, with annotations to describe its characteristics and analyse its formation. Students to use textbooks and internet resources to research the characteristics of vegetation in hot deserts, and explain reasons for these | Continentality and deserts <u>1.</u> Continentality and deserts <u>2.</u> |

| | | | characteristics and describe | |
|---|------------------------|-------------------------------------|----------------------------------|---|
| | | | and explain various | |
| | | | and explain various | |
| | | | any ironment, this could be | |
| | | | environment – this could be | |
| | | | presented as notes, | |
| | | | annotated sketches, revision | |
| | | | poster, electronic | |
| | | | presentation etc. | |
| | | | Q&A and small group | |
| | | | discussion to see if students | |
| | | | can explain possible causes of | |
| | | | aridity Followed by research | |
| | | | task – in groups individuals | |
| | | | could research each element | |
| | | | and then feedback back and | |
| | | | exchange findings and build | |
| | | | up a full explanation | |
| | | | up a run explanation | |
| | | | Opportunity to assess | |
| | | | learning with a range of exam | |
| | | | style questions relating to the | |
| | | | distribution of hot desert | |
| | | | environments and aridity – | |
| | | | peer assessment | |
| | | | opportunity. | |
| Maak 2.4 | | Ctudents will be able to identify | | |
| Week 3-4 | USE OF KEY SUBJECT- | students will be able to identify | to identify any read of an array | Global Insolation patterns |
| Systems and processes | specific and technical | and analyse the characteristics of | to identify sources of energy | Internetive many of summary surfaces with the |
| Sources of energy in hot | terminology. | the sources of energy in not desert | at the coast. | Interactive map of current surface winds |
| desert environments: | Opportunities to | systems, including: | Students to explore energy in | |
| insolation, winds, runoff. | develop skills such as | - insolation | hot deserts. Opportunities | Has desert features – but includes a short |
| Sediment sources, cells | drawing, labelling | - winds | for Q&A, discussion and | section on wind and water in deserts |
| and budgets. | and annotating | - runoff. | research. including: | |
| Geomorphological | diagrams. | Students will be able to identify | - Insolation – insolation | desert winds and place! |
| processes: weathering, | | and analyse the sources of | controlling changes in | |
| mass movement, erosion, | Opportunity to | sediment for systems in hot | temperature and driving | Sediment in deserts |
| transportation and | measure/study | deserts including: | processes: the high angle of | |
| deposition | characteristics of | weathering of underlying parent | incidence: lack of surface | (desert dust) |

| - | | | | | |
|---|----------------------------|--------------------------|---|--|---|
| • | Distinctively arid | wind and other | material | moisture for evaporation | (briefly about source) |
| | geomorphological | aeolian processes | rivers bringing sediment into | making more energy | Link to weathering processes |
| | processes: weathering | including erosion, | deserts | available to heat the air in | <u>Enric to weathering processes</u> |
| | (thermal fracture, | transportation, | aeolian sediments transported | contact with the ground | Link to weathering processes |
| | exfoliation, chemical | deposition and | into deserts and deposited by | Wind – wind as a driver of | Link to weathering processes |
| | weathering, block and | weathering (in the | winds. | processes; hot deserts | |
| | granular disintegration. | context of sand dune | Students will be able to understand | located on mid-latitude high | Link to weathering processes |
| • | The role or wind – | environment). | sediment hudgets and cells in hot | pressure belts being subject | |
| | erosion: deflation and | Handling primary and | deserts Including: | to localized winds blowing | Short RGS guide to types of mass |
| | abrasion; transportation; | secondary sources of | - deserts as a source and recipient | outwards; wind as an agent | movement |
| | suspension, saltation, | data | of sediment | of erosion, transport and | |
| | surface creep; deposition. | uata. | - net sediment loss and net | deposition; bare desert | |
| • | Sources of water: | Online research. | sediment gain in hot deserts | surfaces mean effects of | Desert processes |
| | exogenous, endoreic and | Constructing and | To explore these using a systems | winds are more notable | |
| | ephemeral; the episodic | interpreting a range | annroach | - Run-off – rainfall is spatially | (weathering and erosion introduction) |
| | role of water; sheet | of graphical and | | and temporally | |
| | flooding, channel flash | statistical techniques | Students will understand that hot | unpredictable so too are | <u>(processes in deserts)</u> |
| | flooding. | statistical teoliniqueor | deserts are affected by distinctive | inputs of energy from | (general web page about deserts – |
| | - | Using a range of | geomorphological processes that | runoff; Intense rain storms | contains information on processes) |
| | | maps, photographs | produce distinctive landscape | can produce huge amounts | |
| | | and satellite imagery | features. | of rainfall in localized areas | (simple fonion skin weathering animation) |
| | | to identify desert | Weathering, including: | where run-off can have very | (simple notes on processes in deserts) |
| | | features. | thermal fracture | significant effects | |
| | | Opportunity to apply | exfoliation | 08.4 /paired discussion about | (weathering and erosion in deserts) |
| | | systems theory to | \circ chemical weathering | where sediment in hot | |
| | | identify the inputs. | crystal growth | deserts comes from and how | Wind in deserts |
| | | processes, and | hydration | hot desorts can be both | |
| | | outputs operating in | hydrolysis | sources and sinks for | (animation of aeolian processes) |
| | | hot desert | oxidation | sodimont | (the role of wind) |
| | | environments. | \circ block and granular | seument. | |
| | | | disintegration. | Practice low-tariff exam | (the role of wind) |
| | | | Students will understand the role | questions to assess learning – | (the role of wind) |
| | | | of wind as an agent of | peer assessment | |
| | | | - erosion: deflation and abrasion | opportunity. | (summary notes on aeolian processes) |
| | | | - transportation: suspension | Besearch opportunity to find | (short video on wind erosion – second has |
| | | | saltation surface creen | out about the nature of | good wind animations) |
| | | | - denosition | distinctive geomorphological | <u>Dece and anniadonal</u> |
| 1 | | | | | |

| Week 5-6 | Use of key subject- | Students will understand the sources of water in hot deserts: - exogenous - endoreic - ephemeral. The episodic roe of water in hot deserts: - sheet flooding - channel flash flooding. | processes in hot deserts. This could be presented as a revision poster, revision cards, digital presentation etc. and findings shared with the rest of the group. Q&A/paired discussion – what is the role of wind in hot deserts? Ensure students have notes on how wind erodes, transports and deposits sediment. In pairs/small groups research the sources and role of water in hot deserts – produce a revision resource – mind-map; PowerPoint/Prezi presentation; animation; information sheet or poster, etc. Opportunity to assess learning with a range of exam style questions – could involve some peer assessment. | Water in deserts (endoreic water) (amateur <u>video</u> of river Zin in Jordan) (Colorado River) (A number of the general 'desert' links above have information about water and wind in deserts also) (aeolian processes and landforms) |
|----------------------------|------------------------|--|---|--|
| Week 5-6 | Use of key subject- | Students will revisit the idea of | Q&A/discussion to define of | (aeolian processes and landforms) |
| Arid landscape | specific and technical | distinctive hot desert landscapes | 'landforms' and 'landscapes'. | (landforms created by wind) |
| development in contrasting | terminology. | resulting from a combination of | For each aeolian landform | (The Big Hollow – short video on deflation |
| Origin and development | Develop knowledge | | listed in the specification use | hollow) |
| of landforms of mid and | and understanding of | Students will be able to describe | a range of resources to | (decort payament) |
| low latitude deserts: | a range of related | the characteristics and analyse the | produce a revision | (<u>desert pavement</u>) |
| | landforms that | factors and processes in the | card/sheet (or electronic | |

| aeolian – deflation | combine to form | development of landforms and | resource). To include: | Examples of (ventifact images) |
|--|---|--|---|---|
| hollows, desert | distinctive hot desert | landscapes associated with the | annotated sketch/ | (short video clip on ventifacts) |
| pavements, ventifacts, | landscapes. | action of wind in hot deserts, | diagram showing its | |
| yardangs, zeugens, | To identify | including: | characteristics | (the <u>yardang</u> landforms Geo-Area) |
| barchans and seif dunes; | connections and | - deflation hollows | a flow diagram giving a | Examples of (aeolian landforms) |
| water – wadis, bahadas, | interrelationships | desert pavements | sequenced explanation of | |
| pediments, playas, | between different | - ventifacts | formation – explaining | Examples of <u>(types of dunes)</u> |
| inselbergs. | aspects of | - yardangs | processes in their | Examples of (<u>dunes</u>) |
| The relationship between | geography. | zeugens | development | Plag about (desert landforms, mainly |
| process, time, landforms | 000000000000000000000000000000000000000 | barchans and seif dunes. | factors affecting their | fluvial) |
| and landscapes in mid | Opportunities to | Students will be able to describe | formation | |
| and low latitude desert | develop skills such as | the characteristics and analyse the | - reference to inputs, | |
| settings: characteristic | drawing, labelling | factors and processes in the | processes and outputs of | |
| desert landscapes. | and annotating | development of landforms and | desert landscapes. | |
| | diagrams. | landscapes associated with the | - a named illustrative | |
| | Opportunity to | action of water in hot deserts, | example (not developed | |
| | analyse and present | including: | case study) | |
| | geographical data | - wadis | - a summary of the | |
| | employing a variety | - bahadas | timescales involved in the | |
| | of graphical | - pediments | formation of the | |
| | techniques and | - playas | landforms and subsequent | |
| | descriptive statistics | - inselbergs. | landscapes of which they | |
| | (see skills checklist). | Students will evelore the | are a part. | |
| | Develop | students will explore the | For each landform resulting | |
| | understanding of the | time landforms and landscapes in | from water action listed in | |
| | concent of | characteristic desort landscapes | the specification, use a range | |
| | 'landscane' as a | | of resources to produce a | |
| | combination of | | revision card/sheet (or | |
| | related landforms | | electronic resource). To | |
| | | | include: | |
| | | | annotated sketch/ | |
| | | | diagram showing its | |
| | | | characteristics | |
| | | | - a flow diagram giving a | |
| | | | sequenced explanation of | |
| | | | formation – explaining | |
| | | | processes in their | |

| | | | development factors affecting their formation Reference to inputs, processes and outputs of desert landscapes. a named illustrative example (not developed case study) a summary of the timescales involved in the formation of the landforms and subsequent landscapes of which they are a part. Identify a distinctive hot desert area – describe and assess the relative roles of water and wind in forming individual landforms and how they have combined to form the distinctive landscape they see. Students should discuss how a range of processes operate over different timescales and how the distinctive desert landscape has changed over time. (There is an opportunity to investigate landforms/ landscapes in the field). Opportunities to assess all aspects with a full range of exam style questions, including peer assessment. | |
|----------|--------------------|-----------------------------------|--|--|
| Week 7-8 | Use of key subject | Students will be able to describe | Opportunity for students to | (Various maps of world regions showing |

| Descriftation specification and technical and analyse the changing extent and distribution of hot deserts over the last 0000 years. and analyse the changing extent and distribution of hot deserts over the last 0000 years since the end product and predicted Unanex and product and product and product and p | | | | | |
|---|--|------------------------|--|--------------------------------|--|
| The changing extent and distribution of hot deserts over the last 10 000 years. and distribution of hot deserts over develop skills such as drawing, labelling and annotating change and human impact; distribution of areas at risk impact on ecosystems, landscapes and populations. and distribution of hot deserts over develop skills such as drawing, labelling and annotating of rangs. intermet resources to research the changing distribution of hot deserts bate 10 000 years. Students culd produce maps of change distribution which culd be describe and analyse the causes of angas. Examples of (causes of describication) info about (areas at risk of describication) info about (areas at risk of describication) info about (areas at risk of describication) info about infor students with be able to describe and using to ensure students data. Examples of (causes of describication) info about (areas at risk of describication) info about (areas at risk of describication) infor about describication information on climate change at risk of describication. Opportunity to use an distribution of he distribution of information of information of information of information of historical, recent and predicted climate changes of information of he distribution of hot deserts of information of he distribution of hot deserts of i | Desertification | specific and technical | and analyse the changing extent | use atlases, textbooks and | change since the last glacial maximum) |
| distribution of hot deserts over the last 10 000 years the last 10 000 years the last 10 000 years impact; distribution of desertification - climate change and human impact; distribution of areas at risk of desertification and appulations. Predicted futures for local populations. Develop an and productors. Develop an and system and sys | The changing extent and | terminology. | and distribution of hot deserts over | internet resources to | Examples of (causes of desertification) |
| over the last 10 000 years. • The causes of descritification – climate change and human impact; diagrams. • Predicted climate change and human inditions. • Predicted climate change and human impact; diagrams. • Predicted climate change and human impact; alternative possible futures for local populations. • Predicted climate change and is turnation of the able to describe and analyse the causes of the magnet with a range of maps. • Predicted climate change and human impact; alternative possible futures for local populations. • Predicted climate change and is turnation of the able to describe and analysed. • Develop an understanding of change in the able to describe and analysed. • Develop an understanding of change and is turnation pressure on land. • Anadling primary and secondary sources of information of the able to assess the nature of predicted climate change and evaluate potential impacts of descritification. Human impact of the able to assess the nature of predicted climate change and evaluate potential impacts of descritification and climate change and information of the able to assess the nature of predicted climate change and impacts of climate changes of sources of information of the able to assess al atternative possible futures for poptunity to use a range of sources of information of the distribution of hot deserts and impacts of climate changes of sources of the distribution of hot deserts and impacts of climate changes on the distribution of hot deserts and impacts of climate changes on the distribution of hot deserts and impacts of climate changes on the distribution of hot deserts and impacts of climate changes on the distribution of hot deserts and interval to descritification, including: • impacts on populations aftered by descritification, including: • opsothel alternative descritification, including: • opsothel alternative descritification, including: • opsothel alternative descritification, including: • opsothel alternative descritification, including: • opsothel alternativ | distribution of hot deserts | Opportunities to | the last 10 000 years since the end | research the changing | |
| The causes of desertification – climate change and human impact; distribution of areas at risk; impact on diagrams. Opportunities to engage with a rango of maps. Opportunities to engage with a rango of maps. Develop an understanding of turne tarid areas, including: Climate change – less and moreu unpredictable rainfalt; higher tauges of understanding of turnes for local populations. Develop an understanding of turnes for local populations. Handling primary and secondary sources of information to research. Opportunity to use a range of sources of information to research. Opportunity to use a range of sources of the distribution of hot desertification, including: impacts on adverse of the distribution of hot desertification, including: impacts on populations firet deverse and more upportunity to use a range of sources of information to research change. impacts of climate changes and evaluate potential impacts of climate changes and evaluate potential impacts of climate changes. impacts on andiverse of poprulations after feedback between desertification, including: opportunity to tesparch including: opportunity to selevate the windomersity, loss of climate change and biodiversity loss. | over the last 10 000 years. | develop skills such as | of the last glacial period of the | distribution of hot deserts | Examples of (<u>causes and effects</u>) |
| desertification – climate change and human impact; distribution of areas at risk; impact on ecosystems; landscapes and populations. • Predicted climate change and timpacts; alternative possible futures for local populations. • Develop an understanding of change through geological timescales. Handling primary and secondary sources of data. • Oportunity to use arange of sources of information to research the impacts of historical, recent and itsribution of he distribution of he dis | The causes of | drawing, labelling | Pleistocene. | over the last 10 000 years. | Info about (areas at risk of desertification) |
| change and human impact; distribution of areas at risk; impact on ecosystems, landscapes and populations.diagrams.of changing distribution which could be described and analysed.of changing distribution which could be described and analysed.• Predicted climate change and its impacts; alternative possible futures for local populations.Develop an understanding of change through geological timescales.Develop and land timescales.Develop and land timescales.Develop and land timescales.Develop and land timescales.• Handling primary and data.Students will be able to describ and revolute probulation for tarte of predicted climate change and predicted climate changes.Students will be able to assess the destribution of hot deserts and impacts of limate changes.Different alimpacts of the destribution of hot deserts and matte of predicted by desertification, including | desertification – climate | and annotating | Students will be able to describe | Students could produce maps | |
| impact; distribution of areas at risk; impact of and populations.Opportunities to engage with a range of maps.desertification in relation to recent urrent arid areas, including: - climate change – less and mor unpredictable rainfall; higher temperatures; reduced water sopolations.Info about (impacts of desertification) information about desertification. Ids as to be shared with whole class. Use textbook or other wider reading to ensure students have a comprehensive range of historical, recent and predicted climate change of sources of hot deserts and information to research the impacts of historical, recent and predicted climate changesdesertification, including: - human impact - population growth; population pressure on land.Info about (impacts of desertification) hot deserts and impacts of climate change.impoulations populations.Opportunity to use range of sources of information to research the impacts of historical, recent and predicted climate changesStudents will be able to assess and evaluate potential impacts of desertification, including: - impacts on landscapes.Gportunity for students to use atlases, textbooks and intermet resources to research the impacts - impacts on landscapes.Gportunity for search desertification including: - impacts on landscapes.Gportunity to research desertification, including: - impacts on landscapes.Gportunity to research desertification, including: - opportunity to explore links and feedback between desertification, global climate change and biodiversity to explore links and feedback between desertification, global climate change and biodiversity to explore links and feedback between desertification, global climat | change and human | diagrams. | and analyse the causes of | of changing distribution | Into about (areas at risk of desertification) |
| areas at risk; impact on ecosystems, landscapes and populations. Predicted climate changa and its impacts; alternative possible futures for local populations. Develop an understanding of change through geological timescales. Handling primary and secondary sources of data. Online research. Opportunity to use a range of sources of information to research the impacts of historical, recent and predicted climate changes on the distribution of hot deserts and impacts of climate change. Develop an understanding of change through geological timescales. Handling primary and secondary sources of information to research the impacts of historical, recent and predicted climate changes on the distribution of hot deserts and impacts of climate change. Develop an understanding of change through geological timescales. Handling primary and secondary sources of information to research the impacts of historical, recent and predicted climate changes on the distribution of hot deserts and impacts of climate change. Develop an understanding of data. Dolline research. Opportunity to use a range of sources of information to research the impacts of historical, recent and predicted climate changes on the distribution of hot deserts and impacts of climate change. Develop an information to research the impacts of historical, recent and predicted climate changes on the distribution of hot deserts and impacts of climate change. Develop antime secondary sources of information to research the impacts of historical, recent and predicted climate changes on the distribution of hot deserts and impacts of climate change an biodiversity to esponse further sources the research the impacts of climate changes on the distribution of hot deserts and impacts of climate change an biodiversity to esponse further change an biodiversity to esponse further change and biodiversi | impact; distribution of | | desertification in relation to recent | which could be described and | Info about (<u>impacts of desertification</u>) |
| ecosystems, landscapes and populations. engage with a range of maps. climate change – less and more unpredictable rainfall; higher temperatures; reduced water supply from rivers bevelop an understanding of hatmes for local populations. Develop an understanding of hatmes for local populations. Develop an understanding of hatmes for local geological atransive geological secondary sources of data. Online research. Opportunity to use a range of sources of information to research the impacts of change. Students will be able to assess the distribution of hot deserts and gredicted change. Students will be able to assess the distribution of hot deserts and gredicted change. Students will be able to assess the distribution of hot deserts and gredicted change. Students will be able to assess the distribution of hot deserts and gredicted change. Students will be able to assess the distribution of hot deserts and geological and redicted change. Students will be able to assess the distribution of hot deserts and geological atternative possible futures for populations impacts on coosystems - impacts on landscapes. Students will be able to assess the distribution of hot deserts and geological atternative possible futures for populations affected by desertification, including: - opportunity to explore links and feedback between desertification, global climate change an biodiversity loss - possible alternative development enthe change and biodiversity loss possible future impacts of climate change in hot desertification, global climate change an biodiversity loss possible future impacts of climate change in hot desertification, global climate change and biodiversity loss possible future impacts of climate change in hot desertification, global climate change and biodiversity loss | areas at risk; impact on | Opportunities to | current arid areas. including: | analysed. | Info (anvironmental impacts of |
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| development native using a display, or electronic | | | - nossible alternative | Findings could be shared | |
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| | | - focus on sustainable development. | presentation shared via a VLE. Opportunity for Q&A/group discussion/role play/debate about alternative possible futures for the different stakeholders involved depending on a different development paths. | |
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| Week 8-9 Case study of a hot desert setting to illustrate and analyse key themes in hot desert landscapes and engage with field data (exemplifying field data may be gathered in settings that experience some of the aeolian processes associated with mid and low latitude desert environments such as coastal dunes). | Collect, analyse and interpret a range of quantitative data from a range of primary and secondary sources – this could include: Present, analyse, draw conclusions and evaluate those findings using a range of geographical techniques (see skills checklist). | Students could either study aeolian processes in a local coastal sand dune landscape through the use of secondary data sources – including online digital mapping, secondary data, local authority websites and textbook resources, or students could engage first hand or complete fieldwork to collect primary data, or a combination of both. The aims of such work are to: illustrate how some places are affected by encroaching sand dunes to investigate how geographers could employ fieldwork techniques to measure the aeolian processes at work to show how such fieldwork could be practised in a local sand dune setting. | An opportunity to either create a 'virtual fieldwork investigation' and provide students with a range of data relating to a local coastal sand dune environment for students to investigate and address the themes of the enquiry. Or, an opportunity for students to conduct a short fieldwork enquiry of a local coastal sand dune environment to investigate the main themes of the lesson. Students could write up a mini-fieldwork enquiry to act as a case study of a local coastal sand dune environment. (This could feed into the completion of <i>coursework</i> for the Non-examination assessment element of the specification). | Many of the accompanying textbooks will have illustrative examples of possible coastal fieldwork opportunities, other guidance may be found below. Guidance on <u>coastal fieldwork techniques</u> from the RGS <u>Guidance on coastal fieldwork</u> from the Field Studies Council |
| Case study 2 | Collect, analyse and | Students will be able to describe, | | have illustrative examples of possible case |

| Case study at a local scale of a landscape where desertification has occurred to illustrate and analyse key themes of desertification, causes and impacts, implications for sustainable development. Evaluation of human responses of resilience, mitigation and adaptation. | interpret a range of qualitative and quantitative data from a range of primary and secondary sources – this could include discursive/creative material when looking at the experiences of people in place. (It might be advisable to conduct an investigation of causes, impacts and implications of desertification in a named area in or close to a hot desert region) | analyse and evaluate a range of themes relating to causes, impacts and implications of desertification in an area currently affected by desertification: how population pressure can lead to desertification an analysis of the relationships between people and landscape in areas affected by desertification showing how sustainable solutions can help people adapt to and mitigate the effects of desertification. | Opportunity for individual, paired or group research task, using a range of textual, digital or audiovisual resources. Findings could be shared in traditional classroom approaches or shared through a VLE on a blog for example. For a more active learning approach students could research from the point of view of different stakeholders. Feedback could then take the form of a debate/roleplay or construction of SWOT analysis in groups etc. | studies of populations affected by desertification, but other guidance relating to impacts of desertification can be found above. |
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Quantitative and qualitative skills

Students must engage with a range of quantitative and relevant qualitative skills.

Making connections

Students must consider connections across the themes within the theme of hot desert systems and landscapes, connections between this and other themes in the specification and connections with novel geographical themes beyond the specification.