

**SERIES** 

## **USER'S GUIDE**

## **Learning Theories CLASSICAL & OPERANT CONDITIONING**



This Guide is designed to be read before viewing and an overview of the content and structure of the programme is given to assist with planning and lesson preparation. It is written to support the teaching of psychology and will be particularly helpful for those The DVD includes a menu linking to sections within the new to this subject. programme. The default setting is to play the DVD through automatically. To select a section highlight the relevant heading using the arrows on your remote control and press 'ENTER'. The chosen section will then play through and return to the menu for your next choice.

Running time: 55 minutes (1996)

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We hope you find this programme a useful teaching tool.

## **Structure of the Programme**

Ideally a suitable section should be watched in one session making liberal use of the pause or stop button for discussions and / or note-taking.

We have included many breaks for thought, discussion or activities which are listed in this Guide. The 'Pause the Video' screens are on for about 10 seconds to allow those viewing on video to turn off and switch on again.

Writing materials are required for some of the activities.

Introduction to Learning 6 mins 30 secs

Classical Conditioning 21 mins

Operant Conditioning 22 mins 30 secs

Applications and Summary 5 mins

## Warning

Much of the work on conditioning has involved the use of small non-human animals and the programme reflects this. Some early film showing Pavlovian measurement of secretions from the salivary gland and footage of the modern day use of Skinner Boxes may cause distress to viewers.

We suggest that some basic grounding in ethics and discussion around the use of animals in experiments should precede viewing. There are some suggestions for reading preparation for a group discussion later.

#### **Aims**

- To explain the mechanisms of Classical and Operant Conditioning and to familiarise students with the terms used.
- To illustrate the theories using real-life examples and point out their importance in clinical and educational fields.
- The short breaks, apart from giving the viewers a rest, aim to involve the students in their own learning by taking part in interesting, memorable and meaningful discussions and activities.

## **Psychology Syllabus Links**

- AQA (A) A2 Mod 5 Individual Differences (b) Behavioural Therapies
  13.5 Determinants of Animal Behaviour (b) Classical and Operant Behaviour
- AQA (B) AS Mod 1 10.1.2 Key Approaches Behaviourist Approach; Key influences Skinner

  Mod 4 13 Child Development 13.8 Treatments of Atypical Behaviour approaches and therapies
- AQA (B) A2 Mod 5 Perspectives in Psychology 14.1.2 Behaviourist Perspective
- AQA GCSE Section 10 Cognitive Psychology Learning principles of classical conditioning; principles of operant conditioning
- Edexcel AS Unit 2 The Learning Approach In depth study classical & operant conditioning; Studies in detail Pavlov; Key Applications behaviour change
- Edexcel A2 Applications Unit 4c The Psychology of Education (a) theories of learning behaviourist Unit 5c Health Psychology (a) Health and Substance Abuse learning theory Unit 6 Approaches Behaviourist Approach
- OCR A2 2544 5.5.1 Psychology and Education (d) (i) Perspectives on Learning behaviourist

## **Timing and Content of the Programme**

	Introduction – The nature of Behaviourism		
	Defining Learning ( <b>Break 1</b> ); Associationists; General Process Learning Theory; The Introspectionists and the historical development of Behaviourism		
06.20	Classical Conditioning		
	Pavlov; Stimulus-Reflex (Break 2) Pavlovian terminology forming a CS - CR Link (Break 3) Ethics in animal experimentation Higher Order conditioning (Break 4) Generalisation, discrimination, extinction, spontaneous recovery Emotional responses / physiological reflexes The Laws of Association (Break 5) Taste aversion studies (Break 6) Summary Real world applications		
27.30	Operant Conditioning		
	Comparing Classical and Operant Conditioning E.L. Thorndike's puzzle box The Law of Effect ( <b>Break 7</b> ) B.F. Skinner – reinforcement/reinforcers Shaping behaviour/successive approximations ( <b>Break 8</b> ) Positive and negative reinforcement and punishment Schedules of reinforcement ( <b>Breaks 9 and 10</b> )		
50.00	Summary of Classical and Operant Conditioning		
	Main similarities and differences Applications of classical conditioning eg Aversion therapy, systematic desensitization Applications of operant conditioning eg Behaviour modification, programmed learning Current and Future Research		

## Notes for Breaks for Exercises or Discussion

## 02.00 Break 1

## Try to give a definition of learning from a behaviourist's viewpoint.

Notes: This is discussed before the Break and afterwards the conclusion is drawn that a possible definition should include the following elements: Learning is a relatively permanent change in behaviour as a result of experience.

## 08.20 Break 2

## Can you think of any other stimulus that biologically produces a reflex response reliably and unconditionally?

Notes: Some suggestions are given such as a puff of air produces blinking; cold produces vasoconstriction.

#### 10.30 Break 3

## How could a dog be trained to salivate when he sees a football?

Notes: An association between a bell and salivation has already been discussed. Here the viewer is asked to adapt the chart which is left on the screen during the pause.

#### 13.00 Break 4

## How might Second Order Conditioning make you afraid of buses?

Notes: Second Order Conditioning has already been explained using an association between a pre-conditioned salivation to a bell followed by an association between a bell and a blue square (see chart). Here the viewer is given the example of having been bitten by a dog in a bus shelter. The chart is left up as a guideline.

#### 22.00 Break 5

# Fill in a chart to show the Classical Conditioning link between an advertisement for beer and positive feelings.

Notes: This is related to Pavlov's original idea that contiguity was important for an association to be made. The viewer has seen an advertisement for beer showing backward conditioning (see Types of Conditioning chart). An empty chart is left on the screen for the viewer to complete. Afterwards the completed chart is shown giving an idea of how it may have been filled in.

#### 26.00 Break 6

# What would you need to take into account if you were developing a rat poison?

## From your own experience, do humans show taste aversion?

Notes: Taste aversion studies have been discussed in relation to contiguity and the viewer is asked to discuss these questions in the light of this.

#### 30.15 Break 7

## Have we learnt all our behaviour through being rewarded in some way?

Notes: Another interesting discussion for viewers here followed by possible conclusions from the presenter - shaping behaviour using success; some behaviours are due to reflexes; others rewarded either materially or emotionally; some may occur through fear of unpleasant consequences.

#### 38.00 Break 8

## How could you teach a dog to open a door by the handle using Operant Conditioning techniques?

Notes: Having discussed shaping behaviour using successive approximations, the viewer is then asked to apply this to a training situation. Training a dog to open a door is demonstrated afterwards.

#### 44.30 Break 9

## What would be the best way of positively reinforcing Jenny to make her bed every day?

Notes: We now apply the principles of Operant Conditioning to human behaviour with an example of a young girl being rewarded by her mother with a bar of chocolate every day that she makes her bed.

The schedules of reinforcement are listed followed by their resistance to extinction.

Viewers are then asked to plan their own programme of reinforcement for Jenny.

#### 47.30 Break 10

## Which schedules of reinforcement could you use to ensure that Jenny makes her bed every day?

Notes: The programme of reinforcement suggested after the break is: following an initial period of continuous reinforcement, Jenny could be put on a Fixed Interval schedule with a reward, preferably non-edible, for (say) every 5 days the bed is made, then onto a Variable schedule, eventually leading to occasional praise.

#### **Notes on Content**

The programme includes everything that most students need to know about Conditioning.

The role of cognition is mentioned several times and this is the subject of the follow-up programme <u>Further Approaches to Learning</u>. This picks up where the world of pure reflexes and responses ends and moves with the current trend into the importance of cognitive and ethological aspects in learning.

Teachers may wish to introduce Auto-shaping (superstitious behaviour) which does bridge the gap between the two programmes on Learning and is not included in either programme. It is a complicated concept, and not central to Conditioning, but demonstrates the increasingly blurred division between Classical and Operant conditioning as more research is done. It also shows that cognitive aspects in learning - in animals or humans - cannot be ignored.

The effectiveness of punishment as compared with positive and negative reinforcement is outlined, but not studied in great detail.

Some textbooks abbreviate Unconditioned Stimulus and Unconditioned Response to UCS and UCR; others use US and UR. We have used the latter convention throughout and it may be worth pointing this out to students to avoid confusion.

## Charts used in programme

#### **Classical Conditioning** food salivation US elicits UR

food + bell salivation US + CSelicits UR

bell salivation

CS elicits CR

## **Classical Conditioning**

food salivation

US elicits UR

food + football salivation

US + CSelicits UR

football salivation

CS elicits CR

## **First Order Conditioning**

salivation food

US elicits UR

food + bell salivation

US + CSelicits UR

bell salivation

CS elicits CR

## **Second Order Conditioning**

bell salivation

US elicits UR

bell + salivation

US + CSelicits UR

salivation

CS elicits CR

(break 4 screen)

## **First Order Conditioning**

dog bite fear US elicits UR

dog bite + bus shelter fear US + CSelicits UR

bus shelter fear

CS elicits CR

## **Second Order Conditioning**

bus shelter fear

US elicits UR

bus shelter + sight of bus fear

elicits UR US + CS

sight of bus fear

CS elicits CR

## **Physiological Reaction**

Å BP

electric shock US elicits UR

♣ BP electric shock

+ light US + CS elicits UR å BP light

CS elicits CR

#### **STIMULUS** REFLEX

food salivation a related salivation stimulus

## **Basic Laws of Association**

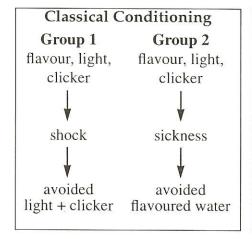
Contiguity

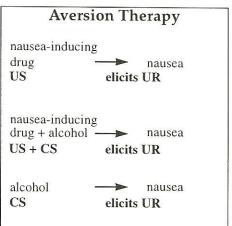
Similarity

Types of Conditioning				
bell food	Delayed			
bell food	Trace			
bell food	Simultaneous			
food	bell Backward			

(Break 5 screen)	
US	elicits UR
US + CS	elicits UR
CS	elicits CR

happy beach scene	positive emotions
US	elicits UR
happy beach scene + product	positive emotions
US + CS	elicits UR
product	positive emotions
CS	elicits CR





## Law of Effect

A behaviour which has been rewarded tends to be repeated; a behaviour which has not been rewarded tends to die out.

**Primary Reinforcer** e.g. food, warmth Secondary Reinforcer e.g. praise, money

**Negative Reinforcement** escape learning avoidance learning

## Classical and Operant Conditioning Comparison

## **Similarities**

Behaviourist approach Stimulus-Response Laboratory animal studies

## Main differences

emits a behaviour & reward is given

response occurs after presentation of stimulus

elicits a reflex

& association formed

response occurs before any reward given

## Schedules of Reinforcement

	reinforced
Continuous	every time
Fixed Interval	e.g. every 5 days
Variable Interval	e.g. every 5 days on average
Fixed Ratio	e.g. every 5th response
Variable Ratio	e.g. every 5th response on average
er er	

ra	te of extinction
Continuous	very fast
Fixed Interval	fairly fast
Variable Interva	al very slow
Fixed Ratio	fairly fast
Variable Ratio	very slow

## **Animal Experimentation – the Ethical Issues**

This is a highly emotive subject and many students of psychology may be members of the numerous groups calling for a ban on all or most research on animals. This topic therefore needs sound preparation and sensitive handling of the arguments for and against using non-human animals in psychology research.

We can't get away from the fact that the principles of learning were established through use of animals in laboratory experiments but we could say that that knowledge has been of great benefit in helping mankind.

It could be argued that animals have also benefited because the outrage at certain experiments has led to the formation of many animal protection groups which have pressurised Governments to establish laws to protect animals from exploitation and cruelty in many other areas.

The early research in learning, as in many other areas of psychology, has to be seen in the context of the times – Pavlov worked at a time when knowledge was pursued almost regardless of the suffering of a few animals and humans; Skinner worked in a climate when Behaviourism ruled with its denial of the importance of the individual.

There has been a law controlling experiments on animals, and a licence required to do so, since 1876 in the UK, but in 1987 the law was tightened up and now licences are granted only to named individuals for specific projects. The Home Office controls this with checks on the premises, the care, breeding conditions and health of the animals as well as rigorous examination of the aims of the project. When deciding whether to grant a licence, the Home Secretary weighs up the likely adverse effects on the animals used versus the likely benefit to result from the work.

The British Psychological Society and The American Psychological Association have published their own Guidelines. These basically advise against any research using animals unless the ends can be shown to justify the means. Any scientific point should be made without the use of living animals whenever possible.

#### References for Ethical Guidelines

British Psychological Society (Mar 2006) Code of conduct, Ethical Principles and Guidelines Leicester BPS available on <a href="http://www.bps.org.uk/document-download-area/document-download-area/document-download-scfm?file-uuid=5084A882-1143-DFD0-7E6C-F1938A65C242&ext=pdf">http://www.bps.org.uk/document-download-area/d

Association for the Teaching of Psychology (1992) Ethics in Psychological research: Guidelines for Students at Pre-degree Level Leicester ATP available on <a href="http://www.theatp.org/">http://www.theatp.org/</a>

Haworth, G. 1992 The use of non-human animals in psychological research: the current status of the debate 'Ethics', Psychology Teaching, New Series (1), 46-54

Russell, Julia 1992 The use of non-human animals in psychological research: the legal context 'Ethics', Psychology Teaching, New Series (1), 39-45 Wadeley, Alison (1991) Ethics in psychological research and practice Leicester: British Psychological Society

#### **Current Trends in Research**

## 1. Developing Contemporary Learning Theories

There was a shift in emphasis during the last half of the 20<sup>th</sup> century from the traditional Global Learning Theories towards Contemporary Learning Theories.

The early theories tended to concentrate on instrumental learning, which was indicative of the belief that Pavlovian conditioning was a fairly simple form of learning and that the mechanisms underlying the acquisition of the conditional response were fairly well understood (Mowrer & Klein, 2001). It had been demonstrated that many responses were not modifiable via classical conditioning leading to the conclusion that this form of learning only applied to certain behaviours. It is now assumed by most researchers that there are two distinct paradigms, or three if you separate operant from instrumental, each with different ways of modifying behaviour.

It is now recognised that no single theory can explain all learning. This may make a single unifying theory of learning difficult, but more recent research shows that the two forms interact in a number of learning situations, leading to positions that entail a combination of paradigms.

Recently, new theories attempt to create a new comprehensive and contemporary theory of learning. For example, **the three dimensional theory of Knud Illeris** from Denmark (2004 – see References). His theory makes two fundamental assumptions. Firstly, that all learning includes two essentially different processes – an interaction with the external environment and an internal psychological process. Secondly, that learning includes cognitive, emotional and societal dimensions.

## 2. The Revival of Interest in Classical Conditioning

April 2003 marked the centenary of Pavlov's first public presentation of the conditioned reflex. He became well-known for his studies of animal associative learning but two international symposia held at Cardiff and Exeter Universities in 2003 underlined his influence on **the study of human cognition**. The presentations from these symposia have been collected together in a book 'New Directions in Human Associate Learning' (2005) (see References). It is clear that a renewed interest in classical conditioning is due to the realisation that it has much wider application than previously thought through, for example, autoshaping and inhibitory conditioning - see applications below. It would be worth reading, in particular, Chapter 11 *Learning to Like (or Dislike) Associative Learning for Preferences* by Andy P. Field.

Field gives a clear review of the research, and points out that although there is a long history (since the 1930s) of studies trying to explain human preferences (for example, for foods we eat, products we buy and people we choose to spend time with), relatively little is understood about how we develop these.

He also discusses, and describes as 'alarming', the many methodological flaws and failure to replicate basic findings which have dogged the research in the past. Researchers are currently looking for what has been labelled **boundary conditions** (De Houwer et al, 2001) that moderate evaluative learning. Among the many suggestions are: "belongingness" between the CS and US, ecological relevance of the learning episode, similarity between CS and US, influence of a prior expectancies and procedural aspects such as number of trials and the intensity of the US. It seems that there is still a great deal of useful work to do before we understand how humans develop associations leading to preferences, and classical conditioning explanations will be at the forefront of this research.

## 3. Animal Welfare and Bioethics

This is an ongoing area of debate with scientists and moral philosophers battling it out. Many of the arguments are familiar:

- o should we use animals for human gain?
- o are animals property or persons?
- o what rights should non-human animals have?
- o how far down the phylogenetic scale do we assign rights?

There is a good contemporary book which includes diverse and controversial views from well-known researchers on this topic such as Peter Singer, Richard Posner and Cora Diamond. (See Nussbaum & Sunstein, 2004 Eds).

## 4. Cognitive Neuroscience

An emerging and vibrant new area of investigation is what is known as Neural Network Learning Theory (NNLT). The evidence that our brains are physically altered by what we experience, and thus learn, has encouraged a move towards modeling the structure and functioning of the brain to improve our understanding of learning. Neural networks are simplified models of the brain composed of large numbers of units (the analogues of neurons) together with weights that measure the strength of connections between the units. These weights model the effects of the synapses that link one neuron to another. Experiments on models of this kind have demonstrated an ability to learn such skills as face recognition, reading and the detection of simple grammatical structure.

## **Current Applications**

## 1. Therapies

Behaviour Therapy including its extended form, cognitive behavioural therapy (CBT), derives from theories of learning. Both classical and operant conditioning, and their clinical applications, remain highly valid and useful today. Shaping techniques have been useful in a wide range of situations such as mental illness, obsessive compulsive behaviour, autism and addiction.

Contingency management is a recently studied therapeutic technique used in the treatment of cocaine addiction (Connell Henderson, 2000). Behavioural reinforcement in the form of retail vouchers is given in Out Patients for negative urine drug screens. This is a very successful attempt to counteract the classical conditioning that results in cravings for cocaine when an addict is exposed to an environment where drugs are being used. Aversive conditioning, using electric shock with artificially induced craving symptoms, has not been found to be effective.

Drugs such as crack cocaine that are extremely addictive produce the strongest conditioned responses and cravings take longer to diminish but still respond to contingency management.

Work with anorexics has also used operant conditioning techniques – negative reinforcement with weight loss - meaning loss of ward privileges - and positive reinforcement with weight gain - meaning extra access to exercise (the compulsive need for exercise being a primary feature of anorexia). (Epling & Pierce, 1996).

## 2. Education

Learning theory research has made an enormous contribution to teaching and learning in the past and continues to contribute as current methods of learning are rapidly changing.

Hartley (2001) has pointed out that students are increasingly asked to learn from **hypermedia** including multiple media and that little is known about the use of strategies in this mode of learning which is now becoming commonplace. Some positive characteristics for the use of hypermedia such as novelty, the multiple modes of presentation, non-linear paths and increased learner control, may also impede the learning for the less strategic student.

It would seem important to ensure that students' learning strategies are monitored and cognitive (eg reading, comprehension) and metacognitive (eg knowledge and understanding of own thinking) strategies are taught. However, Hartley reports studies that have shown that students did not use the strategies they were taught and suggests that hypermedia instructions could be adapted to individual learners and that the methodology in future studies should be improved.

There has been an escalation of the buzz words Problem-based Learning (PBL) and Action Learning recently in the research. In many respects Action Learning is just a description of how most people go about solving problems but with a group dimension, and it also insists that the problem must be 'real' ie no-one knows the answer. The 'weak' form of PLB has been used for centuries and most of us use it regularly in our teaching. However, the 'strong' form, which is becoming popular, requires a very different approach to curriculum planning, course design and working as an interdisciplinary team. For example, student groups from different disciplines would work on a problem requiring input from all subjects such as Maths, Art and Psychology. It also develops new skills, such as group communication, harnessing tasks and compensating for weaknesses. Most medical schools in the USA and across the world are using PBL in some form and many other professional and educational establishments have started using the strategy. Dr Gwendie Camp (1996) asks whether the success and growth of PBL is just a passing fad or a paradigm shift. She hopes it survives to become the norm in education as it is consistent with current philosophical views of human learning using constructivist principles (ie understanding comes from our interactions with our environment), cognitive conflict stimulates learning and knowledge evolves through social negotiation and evaluation of the viability of individual understandings.

## References for Film Script and Guide Update

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- Camp, G. (1996) *Problem-Based Learning: a paradigm shift or a passing fad?* http://www.med-ed-online.org/f0000003.htm
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- Kuhse, Helga & Singer, Peter (2006) *Bioethics: An Anthology (2<sup>nd</sup> Ed.)* Oxford Blackwells
- Leahey, T.H. & Harris, R.J. (1989) *Human Learning 2<sup>nd</sup> Ed.* New Jersey: Prentice Hall
- McIlveen, R. (Ed.) (1992) BPS Manual of Psychology Practicals Leicester: British Psychological Society
- McIlveen, R., Long, M. & Curtis, A. (1994) *Talking Points in Psychology* London: Hodder & Stoughton
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- Tarpy, R.M. & Mayer, R.E. (1978) Foundations of Learning and Memory Illinois: Scott, Foresman & Co
- Wadeley, Alison (1991) *Ethics in psychological research and practice* Leicester: British Psychological Society
- Wertheimer, M. (1970) A Brief History of Psychology New York: Holt, Rinehart & Winston

## **Further Reading for Students**

- Association for the Teaching of Psychology (1992) Ethics in Psychological research: Guidelines for Students at Pre-degree Level Leicester ATP available on <a href="http://www.theatp.org/">http://www.theatp.org/</a>
- Cardwell, M. (2003) *Complete A-Z Psychology Handbook 3<sup>rd</sup> Ed.* Ideal students' companion through A Level and undergraduate courses. Very user-friendly, definitions and jargon explained, revision and exam tips, diagrams and worked examples
- Cardwell, M., Clark, L. & Meldrum, C. (1996) Psychology for A Level London Harper Collins
- Coolican, H. (1994) Research Methods and Statistics in Psychology (2<sup>nd</sup> Ed.) London: Hodder & Stoughton
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- Gross, R.D. (1990) Key Studies in Psychology London: Hodder & Stoughton Hayes, N. (1994) Foundations of Psychology London: Routledge & Kegan Paul

## **Further Reading for Teachers**

British Psychological Society (Mar 2006) Code of conduct, Ethical Principles and Guidelines Leicester BPS available on <a href="http://www.bps.org.uk/document-download-area/document-downloads.cfm?file\_uuid=5084A882-1143-DFD0-7E6C-F1938A65C242&ext=pdf">http://www.bps.org.uk/document-download-area/document-downloads.cfm?file\_uuid=5084A882-1143-DFD0-7E6C-F1938A65C242&ext=pdf</a>

Davey, Graham (Ed.) (2004) Complete Psychology Hodder Arnold
A first year undergraduate text written by a British team – very comprehensive, plenty of artwork, activity boxes, applications, up to date and user-friendly.

Griggs, R. A. (2005) *Psychology: A Concise Introduction* Palgrave Macmillan All the main topics in psychology covered, clearly and concisely - American. A companion website

http://bcs.worthpublishers.com/gray/content/psychsim5/launcher.html is worth looking at for 20 animated activities

## **Some Classics**

Pavlov, I.P. (1927) Conditioned Reflexes London: Oxford University Press Skinner, B.F. (1938) The Behaviour of Organisms New York: Appleton Skinner, B.F. (1948) Walden Two New York Macmillan (Skinner's fictional view of a Utopian USA controlled by Behaviourism)

#### **Websites**

#### www.uniview.co.uk

a large collection of psychology videos, DVDs, posters, brain jellies, X-psyting extras, etc; worth checking regularly for latest news

#### www.theatp.org

the home of the Association for the Teaching of Psychology invaluable access to information and advice for teachers of psychology in UK and Europe

## www.bps.org.uk

the home of The British Psychological Society free downloads of recent articles from The Psychologist magazine

## www.apa.org

the home of the American Psychological Association nothing free on this site!

## Classical & Operant Conditioning User's Guide 0005.3

## www.psychology.heacademy.ac.uk

details of psychology events, resources and research

lists all UK university psychology departments; BPS list of accredited undergraduate courses

## www.s-cool.co.uk

revision site for students on a limited number of topics; club-like feeling with an s-magazine giving advice on bank accounts, interview skills and even how to shave! Teachers World with generic information

## http://www.mrmind.com/mrmind3

turning the Turing Test upside down, MRMIND challenges you to take the Blurring Test and prove to him(?) that you are human - make your case to a robot of your choice take the Human Quotient test - great fun and time-waster!

## www.youramazingbrain.org.uk

just go and enjoy – the brain in great detail, packed with information, activities

## www.holah.karoo.net

information, fun activities, links - excellent for staff and students alike

## http://psyonline.edgehill.ac.uk

A Level resource from Edgehill College for AQA. Good and reliable resource for students and teachers. Includes a countdown to Mod 4 exams to the nearest second!

#### http://psyberfun.users.btopenworld.com/

too new to comment on but looks promisingly weird, wacky and addictive!

## http://en.wikipedia.org/wiki/Psychology

extraordinary free encyclopedia which anyone can edit anytime even without being online! Over 1 million entries with definitions and further information

## http://www.brainconnection.com/

an award-winning site (USA) with lots of relevant material and some excellent animated mini-demonstrations.

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#### Contacts

## The Association for the Teaching of Psychology

The ATP has highly experienced teachers and examiners ready to give advice and assistance, especially for new teachers of this topic. They can recommend textbooks and resources that will get you started.

ATP Helpline: Dorothy Coombs

work: <a href="mailto:dorothy@pursqlove.ac.uk">dorothy@pursqlove.ac.uk</a> 01287 280800

home: dorothycoombs@24whinchat.freeserve.co.uk 01287 636502

New teachers of this topic are well advised to get in touch with the ATP:

The Association for the Teaching of Psychology c/o The British Psychological Society St Andrew's House 48 Princess Road East Leicester LE1 7DR http://www.theatp.org

Annual Conference - The ATP holds an excellent conference for members each July. As well as lectures and workshops, there is an opportunity to meet the examiners and to browse all the latest books and resources.

## The British Psychological Society

The British Psychological Society St Andrews House 48 Princess Road East Leicester LE1 7DR

Tel: 0116 254 9568 www.bps.org.uk

## The American Psychological Association

The American Psychological Association 750 First Street NE Washington DC 20002-4242 USA

Tel: 001 202 336 5500

www.apa.org

#### Resources

Uniview has a large collection of resources for most areas of psychology, biology and sociology. Go online to see a full list of resources or contact Uniview to request a free copy of their latest catalogue:

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- ✓ Reductionism
- ✓ Introduction to Designing Experiments
- ✓ Organising Quantitative Data
- ✓ Inferential Statistics
- Exploring Qualitative Methods

#### Also recommended:

Number Cruncher CD-ROM

All titles are available in VHS and DVD format

New titles are always in development and we welcome suggestions for areas you would like to see included in the Series, as well as any comments you may have about these titles.

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