

Aim of the competition

To increase an understanding among teenagers of how vaccines work and their uses in controlling infectious diseases in children.

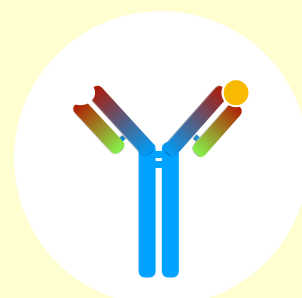


World Polio Day poster.
Shutterstock.com

Background

We are dependent on our immune system for protecting us from disease which results from infection by pathogenic microbes. Fortunately, many minor infectious diseases clear up quite quickly because our bodies react to their presence and destroy the microbes. This is a function of specialised blood cells which are present in blood, tissues and fluids of the body. They are responsible for what is called **non-specific immunity** because it affects all invaders.

Recovery from an infection might also result in immunity to a future infection by that same microbe. This is because the first infection has caused the body to make an immune response which usually fights off repeat infections of that particular disease, e.g. chicken pox. This is known as **natural immunity**. On the other hand, the effects of some infectious diseases such as poliomyelitis, meningitis and influenza are potentially so serious that health-care workers try to *prevent* an infection. The procedures they use stimulate the body to make an immune response if that specific disease strikes. This type of immunity is called **artificial immunity** and is achieved by what is usually known as **vaccination** or, more properly, **immunisation**. The material which is used to induce artificial immunity to a disease is known as a **vaccine**.



Antibody

Object of the competition

You are required to produce information for a **social-media web site (VaccAid)** for teenagers which will explain the scientific basis of the immune response to diseases caused by microbes. You should show how vaccines work, describe the different types of vaccine which are used against different diseases, the ways they are given to children and their effectiveness.

What makes a good social-media page?

Make the presentation of your entry entertaining for its intended audience, i.e. teenagers. Remember that part of the competition judging will be on the *scientific merit* of an entry. This can be improved by using photographs, diagrams, drawings, data and sources of further information. Effective web pages rely on being attractive, informative, lively, well-designed and amusing in order to make an immediate and visual impact on the intended audience. But use your own words because plagiarism will be penalised.

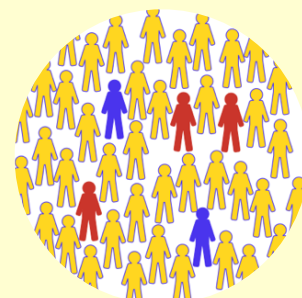
Format of entries

The web-site material must be produced as hard copy on one A3 sheet of paper (or two A4 sheets secured side-by-side with adhesive tape), prepared by computer, or hand written, and using only one side of the paper. The entry may be created by an individual or a group of not more than four students. The entry must be divided into **two equal 'pages'** as follows.

The first 'page' must explain the science of the immune response, describe the different types of vaccines used and how they work. It should give examples of the various diseases against which vaccines are intended to provide protection.

For the second 'page', you must give more information about **one** vaccine (or a group of vaccines) currently used in the UK, that is offered to **children up to 15 years old**, chosen from what you included on your first 'page'. This could include:

- the nature and effects of the disease or diseases and the *scientific* name of the microbe(s) involved,
- how the vaccine is provided to children,
- the ages at which the vaccination is advised,
- the reasons why vaccination is recommended,
- and any other aspects which you consider to be important, such as suggesting improvements which you think might be necessary or desirable.



Herd immunity

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Vaccination

Didesign021 Shutterstock.com

Competition Sponsor



Prizes

Schools	1st £250	2nd £125	3rd £70
Students	1st £100	2nd £50	3rd £25

A certificate will be awarded to each student submitting an entry of scientific merit. The results, winning entries and a report of the competition will be published on the MiSAC web site competition pages www.misac.org.uk.

Further information:

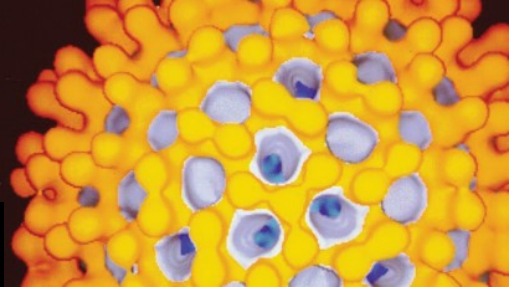
National Health Service Vaccinations Schedule
<https://www.nhs.uk/conditions/vaccinations/nhs-vaccinations-and-when-to-have-them/>

Vaccine Knowledge Project
<http://vk.ovg.ox.ac.uk/>

Association of the British Pharmaceutical Industry
<https://www.abpi.org.uk/what-we-do/supporting-medicines-and-vaccines-development/vaccines/>

e-Bug Science KS3: Prevention of infection
<https://www.e-bug.eu/homepage.html?>

Closing date: 6th April 2020



Promoting microbiology in schools and colleges since 1969

Rules

- Judging will be based on two entry groups: Key Stage 3 (S1/2) and Key Stage 4 (S3/4).
- Each entry must be submitted on paper, on **one A3 sheet** (or two A4 sheets taped together) using one side of the paper only, and may be produced either by hand or by computer.
- Entries may be created either by individuals or groups of no more than 4 students.
- A maximum of 10 entries per school in each entry group is permitted.
- Account will be taken of originality, presentation and effectiveness in communicating with the intended audience.
- Only entries that conform to the competition rules and show scientific merit will be considered; note the requirements and consider the suggestions given on the front page.
- Evidence of plagiarism, such as downloading text directly from web sites without modification and interpretation, will result in disqualification. (MiSAC recommends only reputable sites for research; see www.open.ac.uk/webguide for tips on using the internet.)
- Each entry must be clearly labelled on the back with the name and address of the school, the teacher's name, the full name of each contributing student and the entry group, i.e. Key Stage 3 or S1/2 and Key Stage 4 or S3/4.
- Entries cannot be returned and may be used for promotional purposes by MiSAC.

Check list for teachers

Please tick before submitting entries

- Students' name/s on entry? []
- School name on entry? []
- School address on entry? []
- Teacher's name on entry? []
- Key stage on entry? []
- Entry form completed? []



Closing date 6th April 2020.

Entry form *

Name of teacher:

Tel no:

Email:.....

KS3, S1/2 entry group

Name(s) of student(s)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Name and address of school

.....

.....

.....

KS4, S3/4 entry group

Name(s) of student(s)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

How did you learn of the competition? *Please tick*

[] MiSAC web site [] Post to school [] Emailing [] Social media [] Other

Don't forget to keep a copy of the rules and entry form!

** Personal data for use only by MiSAC in connection with the MiSAC Annual Competition*

Address for entries: MiSAC Competition, c/o NCBE, University of Reading, 2 Earley Gate, Whiteknights Road, Reading RG6 6AU