

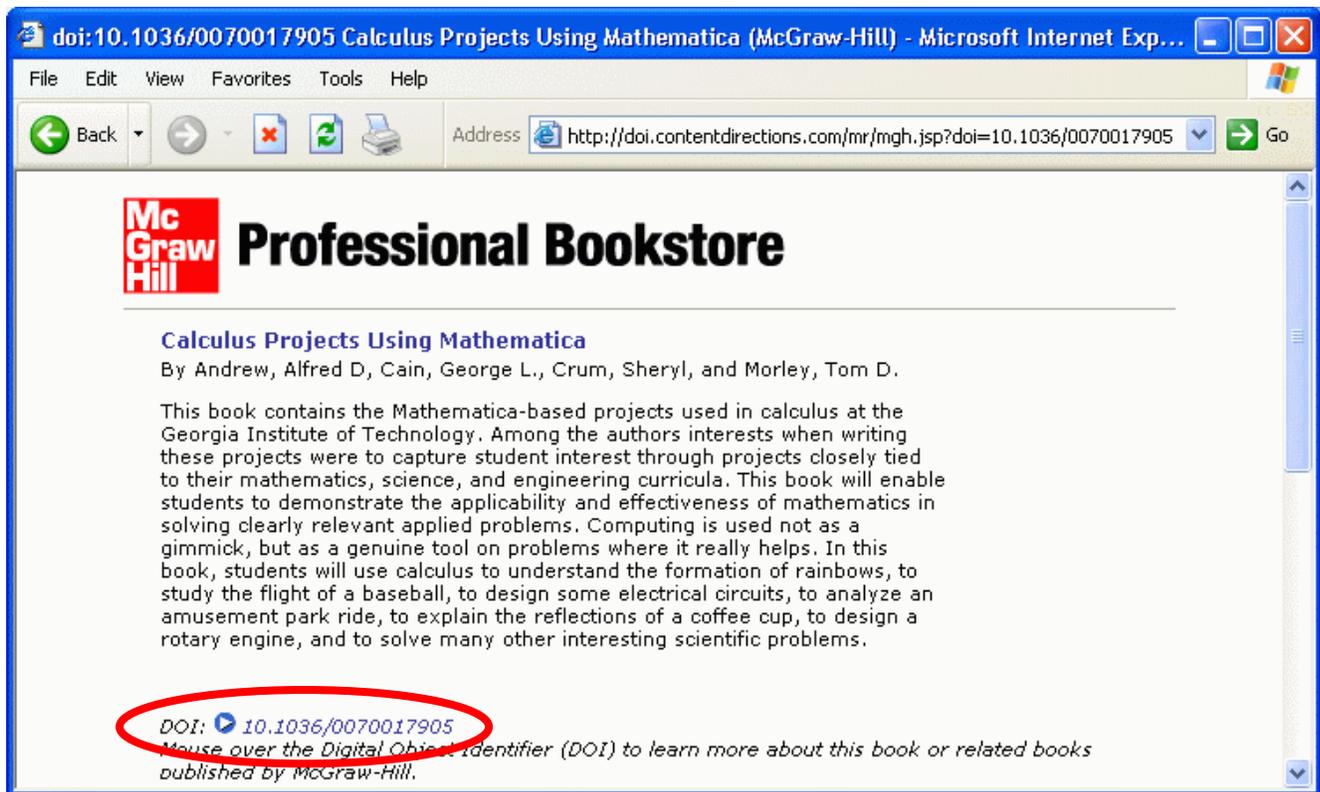
Using Digital Object Identifiers to Create Persistent URLs
A Docutek White Paper, July 2004

A Digital Object Identifier or DOI provides a means of persistently identifying a piece of intellectual property, for example, a full-text journal article, in a digital environment. DOIs have been called "the bar code for intellectual property;" a DOI uniquely identifies a document or similar object. A DOI is different from a URL, however, in that it identifies the object rather than the location of the object. This means that DOIs do not expire in the way that URLs do. More and more publishers are assigning a DOI to the articles and other materials they publish.

The format of a DOI is a prefix and a suffix separated by a forward slash (/). The prefix is typically assigned to an organization, for example a publisher. The suffix is used to identify the specific document or item. It is common to limit the DOI suffix to up to 12 digits; however, the suffix can contain any number of alphanumeric characters.

As an example, the text for "Calculus Projects Using Mathematica" published by McGraw-Hill is identified by the DOI 10.1036/0070017905. The suffix 10.1036 is composed of "10." – the convention for the beginning of a DOI – followed by "1036" to indicate McGraw-Hill. The suffix "0070017905" uniquely identifies the item "Calculus Projects Using Mathematica."

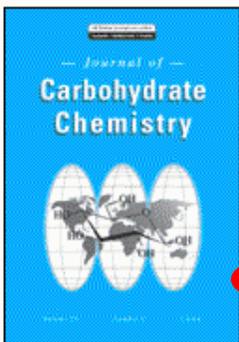
The DOI of an article or other work is almost always displayed on the first page of the document or the Web screen. For example, here is the Web screen for the McGraw-Hill announcement of "Calculus Projects Using Mathematica." The DOI is listed at the bottom of the screen:



Here is an example of an article (from the Journal of Vision published by the Association for Research in Vision and Ophthalmology) with the DOI listed at the top of the first page:

| | | | |
|---|--|---|---|
| Volume 4, Number 6, Article 3, Pages 434-444 | doi:10.1167/4.6.3 | http://journalofvision.org/4/6/3 | ISSN 1534-7362 |
| Attentional modulation of adaptation to illusory lines | | | |
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| Abstract | | | |
| <p>Selective visual attention modulates neuronal activation in various cortical areas. This type of neuronal modulation could happen even in the early stages of visual processing where specific attributes of visual stimuli are processed. It has been shown that different forms of visual aftereffects, such as tilt aftereffect, motion aftereffect, and figural aftereffect, are modulated by attention. In this study, we investigated the effect of visual attention on adaptation to illusory lines. In the first experiment, orientation selective adaptation to a peripheral illusory line was measured in three conditions: (1) poor attention condition in which subjects performed a dual task (even-odd judgment) at the fixation point during the adaptation period, (2) partial attention condition in which subjects only observed successively presented digits at the fixation point and did not perform the task during the adaptation period, and (3) full attention condition in which no visual stimuli were presented at the fixation point. Results showed that the magnitude of adaptation systematically decreased as the attentional load at the fixation point increased. In the second experiment, two transparent illusory contours were presented during the adaptation period, and tilt aftereffects to attended and non-attended illusory lines were compared. The magnitude of tilt aftereffect to the attended illusory line was significantly greater than that to the non-attended illusory line even when non-attended illusory contour was more visually salient. Because visual areas V2 and V1 are the first stage in the processing of illusory contours, we could conclude that visual attention has modulatory effects on the activation of neurons.</p> | | | |

Publishers often list the DOI of journal articles in the table of contents. Here is a sample of the table of contents of an issue of the Journal of Carbohydrate Chemistry published by Marcel Dekker, Inc.; the DOI of each article is prominently displayed:

| | |
|---|--|
|  | Volume 23, Issue 2 & 3 |
| | <p>An Efficient Synthesis of Derivatives of 2-Acetamido-4-amino-2,4,6-trideoxy-D-galactopyranose</p> <p>Hong Liang; T. Bruce Grindley Journal Article Print Published: 06/01/2004 Online Published: 05/12/2004 Pages: 71 - 82 PDF File Size: 172 KB DOI: 10.1081/CAR-120030468</p> <p>Online Article World Price: \$24.00</p> <hr/> <p>Synthesis of C-3 Branched Allyl and Pentadienyl Glucosamines via Radical Coupling of Sugar-Thionocarbonates</p> <p>Qian Wan; André Lubineau; Marie-Christine Scherrmann Journal Article Print Published: 06/01/2004 Online Published: 05/12/2004 Pages: 83 - 93 PDF File Size: 164 KB DOI: 10.1081/CAR-120030469</p> <p>Online Article World Price: \$22.00</p> |

Although there is no reason why a DOI could not be recognized directly by a Web browser – in the same way that a URL is – most browsing technology does not recognize the DOI protocol. Instead, you need to use a gateway server to resolve a DOI reference. This (free!) server is located at <http://dx.doi.org/>; to use it, append a DOI to the http string and submit to a browser. For example, to view “Calculus Projects Using Mathematica” (above), enter the following URL into your browser:

<http://dx.doi.org/10.1036/0070017905>

The examples above show a variety of DOI formats, including DOIs that contain letters and punctuation. Here’s another non-standard example: the DOI for the full text of “A Pacific Culture among Wild Baboons: Its Emergence and Transmission,” published by the Public Library of Science, is 10.1371/journal.pbio.0020106. Locate this article using the URL

<http://dx.doi.org/10.1371/journal.pbio.0020106>

Here are some useful Websites on DOIs:

| | |
|-------------------|---|
| A brief intro: | http://www3.interscience.wiley.com/doiinfo.html |
| Easy to read FAQ: | http://www.tsoid.co.uk/faq.aspx?PageID=FAQ#458 |
| More details: | http://www.gca.org/papers/xmleurope2001/papers/html/s25-2.html |
| DOI Tools: | http://www.doi.org/tools.html |