The Hedge School

Modern History

For First - Sixth Class

Course Manual

Day-by-Day Lesson Plans & Instructional Tips

Authentically Irish, Faithfully Catholic

The Hedge School

Cover Image: Titanic Belfast, photograph
Photo by Steven Hylands on *Pexels*

Titanic Belfast is a world-famous museum located in the heart of Belfast, Northern Ireland, on the very site where the RMS Titanic was designed, built, and launched in the early 1900s. The museum was built to mark the 100th anniversary of the Titanic's maiden voyage and sinking, making it a centenary project for the city. The museum was opened 31 March 2012.

Dia is Muire agus Pádraig duit!

THANK YOU SO MUCH FOR SELECTING *The Hedge School* for your curriculum provider. We are excited to have you with us, and we are looking forward to working with you and your family this year and beyond!

As you may already know, we are a Great Books Curriculum. This means that we'll use very few workbooks (and only when they're strictly necessary!)—and we will instead focus on excellent selections from some of the greatest literature of Western Civilization and from our own Irish heritage. We've picked only the *best of the best* for your student and your family to enjoy together!

Furthermore, we offer you the ease and convenience of being able to combine your similarly-aged children for this study of *Modern History* (1800s-Present). This course is appropriate for **all your students in 1st through 6th class**, *alongside their class-specific curriculum(s) for such things as reading, handwriting, maths and Irish.* This is an exciting and engaging way to study as a group, and we are sure that your whole family will enjoy learning about our modern world.

This year, we will study the Act of Union and the Catholic Relief Act, the Great Famine, Home Rule and the Land War, then the Easter Rising, both World Wars, The Irish Free State and the Troubles. We'll meet the giants of Irish History—Daniel O'Connell, Michael Davitt, Charles Stewart Parnell and, of course, all the leaders of the 1916 Easter Rising.

Last year, we looked at the Reformation and the various Revolutions around the world. This year, we look at the impact of those two giant events on Ireland and our own quest for freedom. We study the *Modern Era*—our most recent history.

How this Course Works

This course is designed for all your children in 1st through 6th Class.
This course contains read-alouds and individual readings for History, Religion and Literature, as well as Physics. We round out our study with Fine Arts Appreciation.

This *Couse Manual* is divided into three parts: Instructional Tips (first part), Booklist (middle) and Day-by-Day Lesson Plans (last). We encourage you to familiarise yourself with the Course Manual, as it will be your go-to for each day's lessons.

The Booklist in the middle contains the complete listing of all texts used in this course.
We carry a few of these on our own website or others are easy to find online. Also, most are available somewhere for free—either in the Irish Library system or online. When the text is available for free (either in the Library or online), that is noted in the Booklist. We've tried to

make sure all our texts are easy to find and affordable; if you have any problem whatsoever locating a book, just send us an email or contact us on the website. We are here to help!

This is a Literature-based Curriculum, so there are *a lot of books!*

Which books do you actually *have* to buy? We encourage you to purchase the books used all year (the first page of the Booklist). These are handy to have around the house, and many are re-used in our other history Courses!

Whether or not you purchase the books used in the 4 individual Terms—is completely up to you! Many of these are at the Library or are free online. You can request them from the Library (ask your Librarian for help!), or you can use the free online resources.
The ones that are not available for free somewhere should be purchased.
(However, if family funds **really** don't allow for all of these right now, feel free to just use the available texts in the Library/free online and omit the others until family finances are more flexible. Alternately, email us and we may be able to loan out any that you cannot purchase at this time, depending on current supplies.)

Once you are a little familiar with the Course Manual and have the books, you're ready to begin! Our Course is divided into Four 9-week Terms. Simply start at Week 1, Day 1, and proceed from there!

In our Day-by-Day Lesson Plans, we have organised the material to be very user-friendly. Simply complete the assignments for everyone together (*Group Studies*), then have your children complete the class-appropriate assignments under *Individual Studies*. You can complete the Group Studies assignments whenever suits your schedule best—over breakfast/ during the day/ as a "Morning Basket". Next, we have a science demonstration every week or so—for all your children to work on together. We wrap up the week with Fine Arts Appreciation—we enjoy listening to music and looking at the art produced during the time periods we are studying. In summary—we've made this hands-on, family-friendly and literature-based: a **fun, enjoyable** *education for the whole family.*

From there, students have relevant texts assigned according to their reading and comprehension abilities, and 5th-6th Class have a few writing assignments as well. For your younger children, the *Individual Studies* are readings about the Term or week's theme. (If most of your children are young, feel free to omit some of the material for now—we want homeschooling to be rewarding, not a burden.) For your older children, your children will be reading more advanced literature and then completing short revision assignments to end each Term. (Note: For 4th Class students: We encourage you to preview the texts and decide if you feel your child would fit better with the younger assignments or the older ones.)

As previously stated, our school year is divided into four separate and distinct Terms, during which we will focus on a particular aspect of this period of time. Throughout the year, we will utilise several living books to fully immerse ourselves in the time periods.

Here's an overview of what you and your child(ren) can look forward to this year:

The Famine and The Land War (1800s): We begin the school year (Term 1) by focusing on Ireland during the 19th Century. We explore life under British rule following the 1798 Rebellion and the Act of Union, and we examine how the ideals of the American and French Revolutions influenced Irish resistance and identity. We study figures such as Daniel O'Connell and learn about Catholic Emancipation. Then we study the Great Famine, its causes and consequences, and how Irish culture, language and Faith stayed strong. We then turn our attention to land reform and the growing movements for Home Rule.

In Physics this Term, we build a strong foundation by studying forces, friction, gravity and simple machines. Students learn key vocabulary and begin developing skills they will use throughout the year.

1916, The Great War & The Irish Civil War (Early 1900s): Term 2 is a study of Ireland's fight for independence. We examine the Irish cultural revival, the Easter Rising, the War of Independence and the following Civil War. We meet key figures such as Pádraig Pearse, Michael Collins and Éamon de Valera and we discuss the results of the quest for freedom. We also turn to world history as we examine the Great War. In Physics, we explore energy, heat, waves and sound.

World War II & the Troubles (Mid-20th Century): In our next Term, we look at the foundation of the Free State. We study the shaping of modern Irish identity, including changes in government, education and society. We learn about the Troubles and Ireland's place in a rapidly changing world. In Physics, we continue by studying light—colour, lasers, telescopes and cameras. We will see how physics underpins technologies that define our contemporary life.

Modern Ireland: In our final Term, we look at the Good Friday Agreement, Vatican II and modern European and Irish history. We conclude our study of physics by looking at circuits, magnetism, motors, electronics, computers and the internet. We have an exciting term of science experiments, where we will take these concepts and build upon them each week—to go from basic magnetism to making our own powered Scribble Robot!

All year: Throughout the year, we bring Irish history to life through exposure to art and music—and quality literature, biography and historical fiction. By the end of the year, students will have a thorough understanding of Ireland's past and her place in the modern world.

Term 1
The 19th Century:
The Famine & The Land War

The Famine & Land War (The 19th Century): Term 1 begins with a detailed look at Ireland during the 19th Century, following the 1798 Rebellion and the 1800 Act of Union. We look at Daniel O'Connell's influence on Irish history, and then the impact of the Great Famine and mass emigration—leading to the Land War and the Home Rule movement.

History, Politics & Timeline: This Term, we will continue reading *The Story of Civilization, Vol. III*, which we began last year in Reformation & Revolutions. This is a well-known text by popular Catholic children's historian, Phillip Campbell.

This resource is an excellent introduction to the history of our world and is suitable for all ages to listen to. There is a wonderful, dramatised audio book directly available from TAN Books or Audible, which we highly recommend. We ourselves also stock the paperback version for readers who prefer a physical book.

In addition, we will continue our reading of *The Saga of Ireland*, by the same author. We began this in Ancient History and will also finish the text this year. This is a fantastic newer resource, and we're delighted to include it in our curriculum plans!

For Primary School, we ask that children simply listen to the assigned readings and then narrate back to their parents (that is, have your child tell you the story back again, in their own words). Narration is one of the absolute best ways for children to *learn and retain* information. The ability to synthesise and retell the main points from a reading is a key skill that we want to work on and encourage. If you were with us before, for Senior Infants or above, you may be familiar with narration. We've provided instructions below:

1. **To do a narration**, simply ask your child(ren) to tell you back all that he can remember from the assigned reading. (Some children can take this to an extreme and not know when to stop; if this seems to be your child, have him choose 2 or 3 main points to tell you about—no more.)
2. It is best to read the passage *only once*, so your child(ren) really learns to focus and to be attentive when reading. We know that this can take practise, so don't worry if you find yourself reading the same text over and over again during the first Term. Attention to detail is a skill that few children naturally possess, and we will continue to work on this as your child advances. By the end of the Term, though, try to make sure that you are only reading the passage *once*.
3. It will be hard with younger children in the house, but endeavour to keep distractions at a minimum, especially during readings which are to be narrated.
4. A good narration should be in your *child's own words*. Discourage them from simply memorizing portions of the text. Instead, we want to ensure they really grasp the content by telling you the most important points of the story or lesson, in their own language and mode of expression.

5. Due to the way we fully immerse the family in any given historical time period, it should be rather easy for your child to make connections with other aspects of the curriculum. We encourage you to help your child make mental connections with other aspects of the curriculum when applicable, or with information he has acquired outside of his studies (like at Mass, from other family members, from personal reading, etc.).
6. Narrations are primarily oral, but if your child is really struggling with this, feel free to use drawing, acting, building, modelling, or any other form of expression—especially when your child is in early Primary School. We will continue to work on oral narrations throughout the primary years. You may choose to have your older children write out their narrations. This can be especially helpful with large families, or when working on handwriting or sentence structures with older children. The most important thing for now is that your child develops a good understanding of the material to be narrated!
7. **If you have more than one child to narrate**: You may ask each child to narrate individually (as described above),
   …or you may have one child narrate first, *on a rotating basis* and then have the other child(ren) add one or two bits of information that they felt was important or that they felt the first child left out.
   …or you may have one child narrate verbally, have one child produce a drawing for a narration and another child produce a poem or play for their narration, again on a rotating basis.
   …or you may have your younger children narrate orally and your older children write a short paragraph.

We will read and narrate chapters from both *The Story of Civilization* and *The Saga of Ireland* throughout the year.

Politics: We will study Irish politics this Term, using a child-friendly and impartial resource, *The Great Irish Politics Book*. This book takes us through historical methods of government, down to our modern voting system. This Term will focus on history and the beginning of democracy in Ireland. Each week has an assigned reading and an optional activity to accompany the reading.

Next, we encourage all families to create a **Timeline** or **Book of Centuries** to display in their school room or elsewhere in their home, *for the complete four-year cycle of History that we offer* (Ancient, Christendom, Reformation & Revolutions and Modern History). The idea is that we will use the same Timeline/ Book of Centuries as we study the entirety of human history and add information to it as we go. (We will begin again on a brand-new Timeline/ Book of Centuries after your family has completed the full four-year cycle—that is, when all the centuries are full!) *If you already have a Timeline or Book of Centuries from another one of our Courses, please continue reading, below.*

A Timeline is an easy and effective way for your child to really visualise the progression of time and make sense of the sheer immensity of human history. If you do not have the space or desire to display a wall-hanging Timeline, you may opt to make a "Book of Centuries" instead—a collection of A4 documents in a ring binder.

We recommend *either* one single wall-hanging Timeline for all members of the family to see and enjoy, *or* an individual Book of Centuries for each child to add information to and to flip through at their own convenience. There are many examples online of both wall-hanging Timelines and

Books of Centuries; we've provided instructions below for both, but do feel free to browse other designs online if you want!

If you opt for a **Timeline**: Simply take a measurement in centimetres of the amount of wall space you have and wish to dedicate to your Timeline. We can assume a starting point of about 2000 BC, and work from there until the present day (so approximately 4000 years of history). For this enormous amount of time, then divide the space you have into four equal parts, as we will be adding 36 new events each year as we study Ancient History, Christendom, Reformation & Revolutions and Modern History. Distinctly mark these parts and we will subdivide them into individual centuries later.

Locate some paper (wrapping paper rolls work great!) and cut it to your desired size. Affix the paper to the wall using tape or Blu Tak or another method. Next, label the centuries as follows:

1. For the first part of your timeline, divide your available space into 20, and label each century from 2000 BC to 0. For example, if you have 40 cm of space to use for this part of the timeline, you would make a tic mark every 2 cm and label the next century there.
2. For the next part of your timeline, divide your space into 15 and repeat, labelling each century from 0-1500 AD.
3. For the third part of the timeline, divide your space into 3, and label each century from 1500 to 1800.
4. Finally, for the fourth part of the timeline, divide your space into 2 and label 1900 and 2000.

If you opt for a **Book of Centuries**: Just take an A4 ring binder and some blank paper. Then label each *two-page spread* as the next century, again starting at 2000BC and working until the present day. There is also a basic *free* template available at Simply Charlotte Mason: https://simplycharlottemason.com/store/basic-book-of-centuries/

Whichever method you decided—Timeline or Book of the Centuries—we're sure your child will enjoy seeing history come to pass!

Read Aloud: This Term, we look at the misfortune of a young family during the Famine, in one of the most popular novels about the Famine.

Under the Hawthorn Tree, by Marita Conlon-McKenna. This is the first in Conlon-McKenna's *Children of the Famine* trilogy. The novel tells the story of three siblings, Eily, Michael and Peggy, who live in a small cottage during the height of The Great Hunger. Sadly, very early in the story, ten-month-old Bridget dies of fever and is buried under the hawthorn tree in the family's garden. The novel details the journey of the remaining children to survive.

For the read-aloud books all year, simply read the stories to your children. No narration or comprehension questions are required!

Poetry: This year, we will continue to look at some classic poems that many Irish parents or grandparents may remember from their own school days! We utilise *Favourite Poems We Learned in School*, collected by Thomas F. Walsh. These lovely poems are all very Irish in content and/or were written by Irish authors—and we are sure that they will be a delight to read and study.

We take two weeks to read and memorise most poems in our selection for this year. We will read the poem throughout the two weeks and discuss the images and meaning contained therein. We will then recite the poem for the whole family at the end of the second week. (We utilise this collection of poems for all four History Cycles.)

Fine Arts: For our study of the Fine Arts this year, we will be looking at and enjoying specifically-Irish art using the resource, *100 Objects*. The *100 Objects* project was completed by An Post, The Irish Times, The National Museum of Ireland and the Royal Irish Academy—and it is as good as a museum visit! The pictures are of excellent quality (some are even better than you'd be able to see yourself in the museum!). However, some of the text descriptions of the objects is quite modern. We have skipped over the most modern of these, but do use your own judgement when reading aloud the other descriptions.

Finally, we'll listen to a selection of music from master musicians, beginning with Schubert. Just listen and enjoy! A Catholic, Franz Schubert (1797-1828) wrote beautiful Masses and sacred choral works. His music is prayerful—yet lovely to listen to and form young ears.

You many also enjoy listening to works by Beethoven (d. 1827), Mendelssohn (d. 1847), Chopin (d. 1849), Liszt (d. 1886), Tchaikovsky (d. 1893), Wagner (d. 1883) or Brahms (d. 1897)—all of whom were active around this time.

Science: Physics: We will study the marvels of the physical world by examining Physics this year. Term 1 is a general introduction to forces, friction, gravity and simple machines. Students learn key scientific vocabulary. The study of Physics is divided into three days; the first day is a reading day using the class-specific resources (described further below). The second day is the experiment/ demonstration—and the third day is an optional picture book day. We feel that these picture books really help make the (sometimes overwhelming) physics concepts come to life for our children. Be aware that all except about 5 picture books are available as a free read-aloud on YouTube—no need to purchase them, unless you want to do so.

The picture books suggested for this Term are below. All of these are available online.

Forces Make Things Move, by Kimberly Brubaker Bradley
Sunshine Makes the Seasons, by Franklyn M. Branley
Gravity Is a Mystery, by Franklyn M. Branley
How do you Lift a Lion?, by Robert E. Wells
How People Learned to Fly, by Fran Hodgkins
Simple Machines, by David Adler
Air is All Around You, by Franklyn M. Branley
Floating and Sinking, by Franklyn M. Branley

For our Group Studies: We will do a weekly demonstration/experiment from the *Big Book of Science Experiments*. For the weekly demonstrations/experiments, we encourage you to preview the supplies needed for the next week and ensure you have them on hand. Most are very basic household items. The only slightly-more-complicated materials are in Term 4.

Individual Studies: Term 1

A note about varied reading abilities: There is a lot of reading assigned here for the individual classes. Whenever possible, try to have your child read the material themselves—this is excellent reading practise and is a vital part of their development as readers and spellers. We take all the opportunities we can to have your child reading interesting and engaging books on their own, as they become increasingly proficient at using written language.

That said, these are not meant to be reading *lessons*—feel free to help your child with the reading material if necessary. For 1st-4th Class: The first book listed is an easy read; it is at an *average* 2nd-3rd Class reading level. Some books are easier, and some are harder. The second book listed will likely require the parent to read it aloud, unless your child is a particularly strong reader.

Since this Course is written for a wide range of Classes, there is a wide range of reading abilities and only you know what your child is capable of. If reading is still a struggle (for example, with a child in 1st or early 2nd Class), please read the text aloud, or skip it for now if you're tired of reading aloud!

A note about 4th Class Students in particular: You may have observed that there are *two* options for 4th Class students. They can be grouped with 1st-3rd Class students, *or* with 5th-6th Class students. We advise you to have a look over the booklist and the reading schedule and decide where your particular 4th Class student would fit. The 1st-3rd Class material features less reading; the 5th-6th Class books are both of a more advanced reading level and are meatier material. For individualised assistance, please email us at info@thehedgeschool.ie.

For Physics and *The Saga of Ireland* workbook: we have kept your 4th Class student with the 1st-3rd Class grouping, as the material is weightier and the average student would fit best with the younger classes. However, as always, you know your own child and his abilities best.

Physics:

1st-4th Class: Have your child read the assigned pages in *First Science Encyclopedia* (helping as necessary with the reading). We utilise the *First Science Encyclopedia* over a range of years in our Curriculum, as this a solid, child-friendly introduction to the various branches of Science.

We'll also be using *My First Book About Physics*. This is technically a colouring book—but is filled with scientific facts and complicated ideas about physics. Ensure that your child takes the time to read the explanations, instead of just quickly colouring in the pages!

5th-6th Class: Have your child read the assigned pages in *DK Science: A Children's Encyclopedia*. Then, have him complete an outline of the key facts/vocabulary in the reading.

In Term 2-3, we'll also have him read biographies of some Irish scientists, most of whom were active during this period.

Optional: While we are doing a range of physics experiments this year—your child may want even more. If your child/ family has a great interest in physics or engineering, we

would also recommend a Physics set. There are a lot of fun ones on the market, largely oriented towards making smelly, gooey, slimy, or otherwise child-friendly experiments. Check out Amazon, Smyths, or most any toy shop. Do consider one for an educational birthday/Christmas gift this year!

1st-4th Class Additional Readings:
We will have your child read a collection of fairy tales by an Irish author. He'll also read about the revelation of the Miraculous Medal.

We've tried to make these readings a bit less grim for the younger children, even though modern history has a lot of war and suffering.

The Happy Prince and Other Stories: is a collection of fairy tales that teach us about love, sacrifice and care for the poor. Oscar Wilde's stories are a collection of beautiful tales and loveable heroes and heroines.

The Miraculous Medal by Mary Fabyan Windeatt: This is a beautiful retelling of the story of the Miraculous Medal and the nun to whom the Medal was revealed.

4th-6th Class Additional Readings
We will have your 4th-6th Class child(ren) enjoy some more advanced readers about Religion, Literature and History. Note that, throughout the year, some books for 4th-6th Class children are assigned by chapter, and some texts are assigned as an approximate number of chapters for your child to read during the week. By doing the latter, we hope to teach your child to pace himself and stay on track to meet deadlines—as he will have to do in Secondary School and in adult life later.

Louis & Zélie: The Holy Parents of Saint Thérèse: This Vision Book tells the little-known but inspiring story of Louis and Zélie Martin, a married couple who lived their faith faithfully through daily work, family life and their share of suffering. Their holiness shows how ordinary people can become Saints!

Around the World in Eighty Days by Jules Verne: This adventure story follows Phileas Fogg on a daring journey around the globe! As he races around the globe, your child will explore many countries and cultures—and will examine the value of determination! We have included optional geography study questions to go along with each week's assigned reading.

Winds of Change: This historical novel introduces three children caught up in the Irish Land Wars, when most families struggled for basic existence. This is a really engaging read, and it helps students understand the hardships faced by tenant farmers.

5th & 6th Class History Workbook

The Saga of Ireland Test Book & Answer Key by Phillip Campbell: This accompanies *The Saga of Ireland* and is comprised of short revision questions and essay prompts. All answers are provided in the text itself.

At the end of each Term, we assign your 4th through 6th Class child(ren) to complete a Term Written Narration Form for any two books that they have read or listened to during the Term. The choice of which two books to write about, is entirely up to your child.

For 4th Class Students: this really can be optional. Use your discretion with your child.

You can find the Form at the end of these Instructional Tips. Please edit your child's work and have them complete any corrections before advancing to Term 2. (Alternatively, you can avail of our optional Essay Grading Service—in which we grade all assigned essays for your child and provide feedback and a numerical score—see this link for more information: https://thehedgeschool.ie/product/essay-grading/)

The Written Narration Form has blanks for basic information about the chosen books (title, author, etc.) and then space for your child to reflect and write about the text. (Feel free to copy this form as many times as you need, in your own family.)

The Book Basket: The Famine

We encourage all our families to have books from their personal library or the public library readily accessible for their children. This is important as we really aim to fully immerse the child (and the family!) in a certain time-period of history.

We would suggest that you have a "basket" (or shelf, or whatever!) of *books related to the curriculum* for your child to browse through independently or to have you read aloud. Below are some ideas to get you started. *This list is far from exhaustive!*

You can find factual books about the Famine and the early 1800s in the Library. However, use your own judgement to ensure these are from a Catholic perspective or at least sympathetic to the Catholic worldview. You can ask your Librarian for help locating these titles.

This time overlaps with the American Civil War. As a significant portion of our families have American ancestry, we've also included some suggested reading material about American history.

For all year
The Gift of Music: Great Composers & Their Influence by Smith & Carlson
Ever Ancient, Ever New Volume 2 by Bethany Pedersen
Modern Saints Books 1 and 2 by Ann Ball

For all ages
Art: Masterpieces by John Constable (d. 1837) and Joseph Mallord William Turner (d. 1851)

The Little Flower by Mary Fabyan Windeatt
Black Beauty by Anna Sewell
The Jungle Book by Rudyard Kipling

For appx. 1st-3rd Classes
Bernadette: The Child Who Saw by Gemma Sales

Daniel O'Connell: Liberator in a Nutshell by Gaye Shortland
Irish Famine Workhouse: A Young Boy's Workhouse Diary (Pop-up Book) by Pat Hegarty
Life on a Famine Ship: A Journal of the Irish Family (Pop-up Book) by Duncan Crosbie
The St. Patrick's Day Shillelagh by Janet Nolan

Adapted versions of Charles Dickens' and Robert Louis Stevenson's books
Anne of Green Gables by Lucy Maud Montgomery
Betsy-Tacy by Maud Hart Lovelace
Caddie Woodlawn by Carol Ryrie Brink
The Great Brain by John D. Fitzgerald
Heidi by Johanna Spyri
A Little Princess by Frances Hodgson Burnett
Story of a Bad Boy by Thomas Bailey Aldrich
The Story of Dr. Dolittle by Hugh Lofting

<u>For appx. 4th-6th Classes</u>
Bernadette: Our Lady's Servant by Hertha Ernestine Pauli
Father Damien and the Bells by Arthur and Elizabeth Sheehan
Florence Nightingale's Nuns by Mary Raymond Shipman Andrews
García Moreno, President of Ecuador by Frank M. Rega
St. John Bosco by F.A. Forbes
Saint John Bosco and Saint Dominic Savio by Catherine Beebe
John Hughes: Eagle of the Church by Doran Hurley
Margaret Haughery: Bread Woman of New Orleans by Gretchen Woelfle
Mother Seton and the Sisters of Charity by Alma Power-Waters
Stories of Don Bosco by Peter Lappin
The Quiet Flame by Eva K. Betz

Remainder of the *Children of the Famine* Trilogy by Marita Conlon-McKenna:
Wildflower Girl and *Fields of Home*
Daniel O'Connell: A Graphic Life by Judy Moylan. This is a fantastic read—even for adults!—highly recommended.
How I Survived the Irish Famine by Mary O'Flynn

Adventures of Tom Sawyer by Mark Twain
Alice's Adventures in Wonderland by Lewis Carroll
Carry on, Mr. Bowditch by Jean Lee Latham
The Chainbearer by James Fenimore Cooper
The Crystal Snowstorm by Meriol Trevor. Highly recommended, covers small revolutions all over Europe, with a focus on Lichenstein.
David Copperfield by Charles Dickens
Great Expectations by Charles Dickens
Island of the Blue Dolphins by Scott O'Dell
Jane Eyre by Charlotte Bronte
Kidnapped by Robert Louis Stevenson
Mr. Midshipman Easy by Frederick Marryat
No Horn at Midnight by Geoffrey Trease

Oliver Twist by Charles Dickens
Pride & Prejudice by Jane Austen
The Swiss Family Robinson by Johann David Wyss
The Wells Brothers: The Young Cattle Kings by Andy Adams
White Fang by Jack London

The Americas:
Black Robe Peacemaker: Pierre De Smet by Joseph G.E. Hopkins
Mother Cabrini: Missionary to the World by Frances Parkinson Keyes
The Call of the Wild by Jack London
Little Women by Louisa May Alcott
The Log of a Cowboy by Andy Adams
Old Yeller by Fred Gipson
A Tale of the Western Plains by G. A. Henty

The American Civil War:
Chaplain in Gray: Father Abram Ryan by Katherine Burton Heagney
Across Five Aprils by Irene Hunt
The Boys' War: Confederate and Union Soldiers Talk About the Civil War by Jim Murphy
Gettysburg by MacKinlay Kantor
Lincoln: A Photobiography by Russell Freedman
Narrative of the Life of Frederick Douglass by Frederick Douglass
The Red Badge of Courage by Stephen Crane
The Slopes of War by Norah Perez
Up from Slavery by Booker T. Washington
With Lee in Virginia by G. A. Henty

Term 2
The Early 20th-Century
1916, The Great War and the Irish Civil War

We spend this Term looking at, arguably, the most important event in Irish history in recent times—the Easter Rising. We then examine its aftermath and Ireland's continued fight for freedom. We put this into the context of World History by also looking at The First World War. We look at the leaders of the Rising and other heroes of this time, including Fr. Willie Doyle and Michael Collins. Finally, we learn about the Marian apparitions at Fatima and Our Lady's message for the world.

History, Politics & Timeline: We continue reading *The Story of Civilization, Volume III* and *The Saga of Ireland*. As in Term 1, we ask that your child(ren) listen to the week's assigned readings and then narrate back to their parents. By this Term, we really expect that children be able to provide a narration back to their parents for *most* readings, *most* of the time. (If you need to read more about narration, please revisit the notes for Term 1.)

We continue to use *The Great Irish Politics Book* and continue to add to our **Timeline** or **Book of Centuries**.

Read Aloud:
We will be reading a gripping account of the life and death of an Irish Priest serving in the First World War: Fr. Willie Doyle.

> *Courage Under Fire* by Fiorella De Maria. This details the life of Fr. Doyle—from his privileged Victorian youth to his ordination and his service as a chaplain to the thousands of Irish soldiers in France. Fr. Willie Doyle's cause for canonisation is underway—may we soon have another canonised Irish Saint!

Poetry: We continue studying a selection of classic poems from *Favourite Poems We Learned in School.*

Fine Arts: We continue our study of art, using the resource *100 Objects*, as in Term 1. We hope you enjoy these examples of beautiful art and significant artefacts from our own history!

For music appreciation, we listen to the very talented Giuseppe Verdi (1813–1901). He was an Italian composer best known for his operas and Sacred Music. If you are interested, you many also enjoy listening to works by Strauss (d. 1899) or Dvorak (d. 1904), who died at the beginning of this period.

Science: Physics: We continue to look at some basic ideas in Physics, include energy, heat, waves and sound. We learn that energy can be potential or kinetic, and we learn about heat and the transfer of heat. Our younger students will apply this to learning about volcanoes as well. We'll finish the Term with a look at sound and music!

The picture books suggested for this Term are below. All of these are available online.

Energy Makes Things Happen, by Kimberly Brubaker Bradley
The Magic School Bus and the Electric Field Trip, by Joanna Cole
The Magic School Bus Gets Baked in a Cake, by Joanna Cole
Volcanoes, by Franklyn M. Branley
What Is the World Made Of?: All About Solids, Liquids, and Gases, by Kathleen Weidner Zoehfeld
What's Smaller than a Pygmy Shrew?, by Robert Wells
Energy: Physical Science for Kids, by Andi Diehn
Sounds All Around, by Wendy Pfeffer

For our Group Studies: We continue to utilise the *Big Book of Science Experiments* and our optional picture books.

Individual Studies: Term 2

Physics:

1st-4th Class: Have your child continue to read *First Science Encyclopedia* (helping as necessary with the reading). Also, continue to read and colour the pages in *My First Book About Physics*.

5th-6th Class: Have your child continue to read the assigned pages in *DK Science: A Children's Encyclopedia*. This Term, he will also read the biographies of select Irish scientists, beginning with Robert Boyle!

1st-4th Class Additional Readings:

Finally, we will have your child enjoy some great stories about History.

Tom Crean: Ice Man tells the harrowing story of Tom Crean, Irish explorer to the South Pole. This account by Michael Smith is sure to be a hit with your boys!

Lily at Lissadell by popular author Judi Curtin, is a delightful look at the situation of the poorer classes struggling to find work and survive in turn-of-the-Century Ireland. This historical fiction novel features Lily, who is forced to leave school early and start working to help her family. She works as a maid on the Booths-Gore estate in Mayo, where she meets and befriends Countess Markievicz's young daughter, Maeve. This is the first book in the series, which your daughters may enjoy reading more of.
The author also wrote a series about two emigrant sisters who move to New York in search of a better life. We'd also recommend these for your daughters.

Note: There is a series called "Irish History in a Nutshell", published by Poolbeg, that we would not ordinarily recommend, but your particular family may enjoy them as they are all easy reads and there are many books about this time. Unfortunately, most are a bit coarse and many treat the Catholic Church with indifference or even negativity.

4th-6th Class Additional Readings

Finally, we will have your child enjoy some more advanced readers about Religion, Literature and History.

The Children of Fatima by Mary Fabyan Windeatt: This is a lovely account of the Marian apparitions in Fatima, Portugal. It tells the story of the vision and Mary's message for the world.

The Young Rebels by Morgan Llywelyn details the 1916 Easter Rising—as seen through the eyes of one of the pupils of Padraig Pearse's school! It is a thrilling book and a fast read.

Michael Collins: Hero and Rebel by Eithne Massey: This is the story of one of the most famous personages in Irish history—Cork native, Michael Collins.

5th & 6th Class History Workbook

The Saga of Ireland Test Book & Answer Key by Phillip Campbell: We'll continue to use this workbook.

We again assign your 4th through 6th Class child(ren) to complete the Term Written Narration Form, for two books that they have read or listened to during the Term.

The Book Basket: Easter 1916

For all ages
Our Lady Came to Fatima (Vision Books) by Ruth Fox Hume
Pope St. Pius X (Vision Books) by Walter Diethelm, O.S.B.
Flame of White by William Hunermann

Art: Masterpieces by Monet (d. 1926), Whistler (d. 1903) or Homer (d. 1910)

For appx. 1st-3rd Classes
Our Lady's Wardrobe by Anthony DeStefano
Marian Consecration for Children by Carrie Gress

The Easter Rising, a pop-up book by Pat Hegarty
Shackleton: The Boss by Michael Smith
Remainder of the *Lily at Lissadell* series by Judy Curtin.
Sally in the City of Dreams by Judy Curtin. This is the first book in the series.
From the *In a Nutshell* series: *Countess Markievicz* by Ann Carroll, and *Tom Crean* by Gaye Shortland
Tom Crean's Rabbit, a lovely picture book by Meredith Hooper
The Indestructible Tom Crean: Heroic Explorer of the Antarctic by Jennifer Thermes
The RMS: Leinster: The Forgotten Tragedy by Carmel Uí Cheallaigh

All of a Kind Family by Sydney Taylor
The Boxcar Children by Gertrude Warner
The Bravest Man in the World by Patricia Polacco
A Little Princess by Frances Hodgson Burnett
The Jungle Book by Rudyard Kipling

Misty of Chincoteague by Marguerite Henry
Mouse and Motorcycle by Beverly Cleary
Sarah, Plain and Tall by Patricia MacLachan
The Secret Garden by Frances Hodgson Burnett
Poetry: *Hilaire Belloc's Cautionary Verses*

For appx. 4th-6th Classes
St. Guiseppe Moscati: Doctor of the Poor by Antonio Tripodoro
St. Katherine Drexel: Friend of the Oppressed by Ellen Tarry
St. Maria Goretti: In Garments All Red by Fr. Godfrey Poage
Mother Cabrini: Missionary to the World by Francis Parkinson Keyes
The Century by Peter Jennings. Lovely general reference book.

At War with the Empire by Gerry Hunt
Dan's Diary series by Poolbeg Hands on History
Friend or Foe: Which Side Are You On? by Brian Gallagher
Guns of Easter by Gerard Whelan
Race the Atlantic Wind by Oisín McGann
Safe Harbour by Marita Conlon-McKenna
SOS Lusitania by Kevin Kiely
Survivors: A True-life Titanic Story by Elisabeth Navratil

The War: 1914: A History for Boys & Girls by Elizabeth O'Neill
1917: Red Banners: White Mantle by Warren H. Carroll
A Heart for Europe by Joanna Bogle, about the Hapsburg family
Holding the Stirrup by Baroness Elisabeth von Guttenberg. Beautiful account of devotion to the Faith and one's homeland in the context of marriage, set in very troubled times. For advanced readers—or save it for Secondary school, but definitely have your children read this one at some point!
The Good Master by Kate Seredy. Set in Hungary after the First World War. This has a sequel, *The Singing Tree.*
Penrod by Booth Tarkington. Set in the USA after the First World War.
I am David by Ann Holm. Russian Revolution.

Literature:
The Lost Island by Eilís Dillon
The Lost World by Sir Arthur Conan Doyle
Sherlock Holmes series by Sir Arthur Conan Doyle
Mrs. Frisby & the Rats of NIMH by Robert O'Brien
The Turf-cutter's Donkey by Patricia Lynch
Where the Red Ferm Grows by Wilson Rawls

Term 3
The Mid-20th Century
World War II & The Troubles

We continue our study of modern times by looking at the formation of the Irish Free State, World War II and the other wars of the 20th Century, then Vatican II and the Troubles. We continue to learn about the leaders of this time and meet Msgr. Hugh O'Flaherty and a selection of modern Saints. This is a busy Term, but we are sure you and your children will enjoy it!

History, Politics & Timeline: We will continue reading *The Story of Civilization, Volume III: The Making of the Modern World* and *The Saga of Ireland*. We again ask that your child(ern) listen to the week's assigned readings and then narrate back to their parents.

We'll also continue to use *The Great Irish Politics Book* and continue to add to our **Timeline** or **Book of Centuries**.

Read Aloud:
We will read the exciting biography of Irish Priest Msgr. Hugh O'Flaherty, set during the Second World War:

> *Hugh O'Flaherty: The Irish Priest Who Resisted the Nazis*, by Fiorella De Maria. Stationed at the Vatican during the fall of Mussolini and the German invasion of Italy in 1943, Msg. O'Flaherty emerged as one of World War II's most daring heroes. Witty, brilliant and fearless, the Irish priest masterminded a vast underground network that helped escaped Allied prisoners of war and persecuted Jews evade Nazi capture. Working with a courageous band of priests, nuns and laymen, he put his life at risk every day.

Poetry: We will continue our study of classic poems from *Favourite Poems We Learned in School*, as in the previous Terms.

Fine Arts: We will continue our study of Irish art with the *100 Objects* resource. You may also want to look at works of art by Cassat (d. 1926) or Harry Clarke (d. 1931), if desired.

For music appreciation, we listen to the music of Claude Debussy (d. 1918). He was a French composer, best known for his *Impressionist* works, especially *Clair de lune*. You may also enjoy music by Sousa (d. 1932) or Rachmaninoff (d. 1943), or any other composer of your choice.

Science: Physics: This Term, we will look at light: colour, lasers, reflection & refraction—then some real-worl uses of light: telescopes, cameras, moving pictures and medical technology. We also continue our optional picture books and our scientific demonstrations with *Big Book of Science Experiments*.

The picture books suggested for this Term are below. All of these are on YouTube.

What Makes a Shadow?, by Clyde Robert Bulla
Light Is All Around Us, by Wendy Pfeffer
All About Light, by Lisa Trumbauer
Light Waves, by David Adler
You're Aboard Spaceship Earth, by Patricia Lauber
Floating in Space, by Franklyn M. Branley
The Sky Is Full of Stars, by Franklyn M. Branley
The Magic School Bus Explores the Senses, by Joanna Cole

Individual Studies: Term 3

Physics:

1st-4th Class: Week 19: Have your child continue to read the assigned pages in *First Science Encyclopedia* (helping as necessary with the reading) and *My First Book About Physics*

For the remainder of this Term, we will read about Thomas Edison, and the lesser-known Nikola Tesla. This fascinating book will provide a first-hand look at some of the most influential scientists of our time!

5th-6th Class: Have your child continue to read the assigned pages in *DK Science: A Children's Encyclopedia* and *Famous Irish Scientists*. We will complete the biography book during this Term.

1st-4th Class Additional Readings:

Finally, we will have your child enjoy a biography and an historical fiction novel.

Eamon De Valera: In a Nutshell by Rod Smith. Recounts the life of De Valera, from his involvement in the Easter Rising, The War of Independence and the Irish Civil War—and his service as both Taoiseach and President and his part in the creation of the Irish Constitution. (Easy read.)

The Cottage at Bantry Bay by Hilda van Stockum: This book was written in 1938 and offers a vivid picture of an Ireland that has all but disappeared. The O'Sullivan family invite the reader to share their many homely adventures, while Mother and Father keep the family together with engaging stories and affection.

4th-6th Class Additional Readings

We have your older children read the following stories about Religion, Literature and History.

Wounds of Love: The Story of Saint Padre Pio: This is the beautiful tale of love and suffering—of St. Padre Pio, a modern-day St. Francis. Written by the very talented Phillip Campbell, this is sure to engage your children.

The Hobbit by J.R.R. Tolkien: For our Literature selection, we'll read one of Tolkien's novels. A true classic.

Enemy Brothers by Constance Savery: British airman Dym Ingleford is convinced that a young German prisoner is actually his long-lost brother Anthony, who was kidnapped years before! Raised in the Nazi ideology, Anthony has by chance tumbled into British hands. Dym has brought him back, at least temporarily, to the family he neither remembers nor will acknowledge as his own.

If you don't have this particular book, feel free to substitute it for either of the following, which are also fantastic reads. (Or read all three!)
Small War of Sergeant Donkey by Maureen Daly
or *The Winged Watchman* by Hilda van Stockum

5th & 6th Class History Workbook

The Saga of Ireland Test Book & Answer Key by Phillip Campbell: We'll continue this workbook during this Term.

We again assign your 4th through 6th Class child(ren) to complete the Term Written Narration Form once again, for two books that they have read or listened to during this Term.

The Book Basket: The Troubles

<u>For all ages</u>
Art: Cassat (d. 1926), Harry Clarke (d. 1931)
Music: Anything by Sousa (d. 1932), Rachmaninoff (d. 1943), or any other composer of your choice
Father Brown and the Ten Commandments by G.K. Chesterton
The Story of the Trapp Family Singers by Maria Von Trapp
Poetry: *The Moon Spun Round* by Yeats

<u>For appx. 1st-3rd Classes</u>
Remainder of the *Cottage at Bantry Bay* series
A Day on Skates by Hilda van Stockum
Meet the Michells by Hilda van Stockum. A lovely story about a family in Washington, D.C., during WWII

<u>For appx. 4th-6th Classes</u>
St. Maximillian Kolbe by Fiorella De Maria
Saint Jose: Boy Cristero Martyr by Kevin McKenzie
Bl. Miguel Pro by Ann Ball
Padre Pro: Mexican Hero by Fanchón Royer
St. Edith Stein: Blessed by the Cross by Mary Lea Hill, FSP
St. Pio of Pietrelcina: Rich in Love by Ellen Dunn Bertanzetti
Stories of Padre Pio by Katerina Tangari

Term 4
Modern Times
The '60s - Present

We finalise our study of modern times by looking at the continued Troubles in Northern Ireland culminating in the Good Friday Agreement—as well as some world history: Vatican II, the overall decay of morals in the West and the global development of new technologies and ideas. We will look at some modern literature and learn about some very recent Saints. Finally, we examine modern technologies including computers, the internet and robotics to complete our study of Physics.

History, Politics & Timeline: We will finish reading *The Story of Civilization, Volume III: The Making of the Modern World* and *The Saga of Ireland*. We again ask that your child(ern) listen to the week's assigned readings and then narrate back to their parents.

We'll also complete *The Great Irish Politics Book* and add a few more entries to our **Timeline** or **Book of Centuries**.

Read Aloud:
We will enjoy reading a gentle fantasy novel, first published in 2008. This is a look at more modern literature, but from a child-friendly and Christian perspective.

> *On the Edge of the Dark Sea of Darkness*, by Andrew Peterson, is the first book in The Wingfeather Saga series. This novel is about three siblings, Janner, Tink and Leeli Igiby; their mother and grandfather—and the so-called Fangs of Dang. The Fangs have conquered the land and seem to exist purely to torment the people there…

Poetry: We will complete our study of classic poems from *Favourite Poems We Learned in School.*

Fine Arts: We finalise our study of Irish art with the *100 Objects* resource.
You may also want to look at works of art by Yeats (d. 1957) or Margaret Clarke (d. 1961), if desired.

For music appreciation, we listen to *Britten: The Young Person's Guide to the Orchestra, Variations on a Theme, etc.* Benjamin Britten provides a brilliant introduction to orchestral instruments, built on variations of a theme by Henry Purcell. This work features solos and a "fugue", thereby showcasing each section of the orchestra! The fugue is comprised of a main theme (the *subject*), which is first introduced then repeated by other voices in turn.

You may also enjoy music by Stavinksy (d. 1971) or Copland (d. 1990), or your choice of other composers.

Science: Physics: During this Term, we dive into the modern applications of Physics—from the electric motor, to computers, the internet and robotics. We will complete each of our Science texts.

The picture books suggested for this Term are below. These are available on YouTube.

Flash, Crash, Rumble and Roll, by Franklyn M. Branley
Oscar and the Bird: A Book about Electricity, by Geoff Waring
What Makes a Magnet?, by Franklyn M. Branley
Running on Sunshine: How Does Solar Energy Work?, by Carolyn Cinami DeCristofano
Energy from the Sun, by Melvin Berger
Switch On, Switch Off, by Melvin Berger
Phones Keep Us Connected, by Katheel Weidner Zoehfeld
How to Talk to Your Computer, by Seymour Simon
Can You Count to a Googol?, by Robert E. Wells

All experiments for this Term can be found in this Introductory Material (located after this overview of this Fourth Term). We will take our investigations from the basics of magnetism, to creating our own motors (with and without a control switch), then to building our own Scribble Robot. The only additional equipment you will need is copper wire and, if at all possible, a couple of *strong* magnets (like neodymium or scientific bar magnets).

Individual Studies: Term 4

Physics:

1st-4th Class: Have your child continue to read the assigned pages in *First Science Encyclopedia* and complete the pages in *My First Book About Physics.*

5th-6th Class: Have your child continue to read the assigned pages in *DK Science: A Children's Encyclopedia.*

1st-4th Class Additional Readings:

Finally, we will have your child enjoy a spiritual book and a fiction novel.

My Path to Heaven: A Young Person's Guide to the Faith by Geoffrey Bliss, S.J., is a beautiful children's "retreat". This little book helps your child really live the faith and strive after holiness—a must in the modern world!

The Magician's Nephew by C.S. Lewis (born in Belfast!). Lewis' *The Chronicles of Narnia* are a timeless classic—and this is the first introductory book to the history of Narnia itself…even before Peter, Susan, Edmund and Lucy arrived! This book details the founding of Narnia and takes us through the first act of disobedience therein. (We hope you continue to read the rest of the series over summer!)

4th-6th Class Additional Readings

We close the year with a few more novels about Religion, Literature and History.

Carlo Acutis: A Saint in Sneakers by Courtney Mares: This is the inspiring story of a teenager from Milan, who died at 15 and who has become the first Millennial to be canonised by the Catholic Church. Carlo called the Eucharist "my highway to heaven" and eagerly shared his love for Christ's Real Presence in the Blessed Sacrament.

Redwall by Brian Jacques: The first book in the best-selling *Redwall* fantasy series. Redwall Abbey is home to a community of peace-loving mice. However, the Abbey is under threat by the evil, one-eyed rat warlord Cluny the Scourge and his army.

Stormclouds by Brian Gallagher: Set in Belfast in the late-Sixties, this story looks at two children from the opposing Nationalist and Loyalist communities—and their unlikely friendship with a reporter's son and daughter. Warning: mild language is used at times.

5th & 6th Class History Workbook

The Saga of Ireland Test Book & Answer Key by Phillip Campbell: We'll finish the workbook during this Term.

We again assign your 4th through 6th Class child(ren) to complete the Term Written Narration Form, one last time, for two books that they have read or listened to during this Term.

The Book Basket: Modern Ireland

For all ages

Music: Anything by Stavinksy (d. 1971), Copland (d. 1990), or any other composer
Art: Yeats (d. 1957) or Margaret Clarke (d. 1961)

Any book by Tom McCaughren: children's fiction set in Ireland, including his fox stories, as well as his *Legend of the Phantom Highwayman* and other historical fiction

Poetry: *The Moon Spun Round* by Yeats

For appx. 1st-3rd Classes

The Boy Who Loved Maths: The Improbable Life of Paul Erdos by Deborah Heiligman
Patrick and the President by Ryan Tubridy

For appx. 4th-6th Classes

Saint Gianna Beretta Molla: The Gift of Life by Susan Helen Wallace

All Creatures Great and Small by James Herriot
A Wrinkle in Time by Madeleine L'Engle

Term Written Narration Form

The Term Written Narration Forms for 4th and 6th Class follow on the next few pages.
These forms may be reproduced for all your children, within your own family.
(Please do not distribute the Forms outside of your own family.)

There are two Forms: one for works of Fiction and one for works of Non-fiction.
Remind your child to use proper grammar and spellings!

4th through 6th Class
Term Written Narration Form: For Works of Fiction

Student Name: _____ Date: _____

Title of Book: _____ Author: _____

What year or period was the book originally written? _____

What time period is the book set in? _____

Who is the Main (Primary) Character? _____

What are his or her most noticeable traits (include page numbers or incidents from the text to support your answers)?

1. _____
2. _____
3. _____

List *two* Supporting / Secondary Characters and their most noticeable character trait.

Supporting Character 1: Name: _____

Most prominent trait: _____

Supporting Character 2: Name: _____

Most prominent trait: _____

List *two or three* things that you learned from this book (include page numbers or incidents from the text to support your answers).

1. _____
2. _____
3. _____

Describe the most exciting or important part of the plot (the climax).

_____

_____

_____

Describe *three* times the Characters (Main or Supporting) acted virtuously in the text.
Write what the characters did, then identify the virtue they showed. Define the virtue.

1. _____

_____

2. _____

_____

3. _____

_____

Summarise the connections you made between this text and other works that we have read in this Term (or in other Terms). Some suggestions (you do not need to answer all the questions!):

Why did you choose *this* book as one of your two for a Written Narration?
Who/what most inspired you in the book? What did you *not* like about the book?
What will you most remember from this book? Who will you try/not try to be like? etc.
This should be a complete paragraph of at least 3-5 sentences.

_____

_____

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4th through 6th Class
Term Written Narration Form: For Works of Non-Fiction

Student Name: _____ Date: _____

Title of Book: _____ Author: _____

What year or period was the book originally written? _____

In a few words, what is the main topic of this book (ex. pyramids, the Mass, Constantine, etc.)?

_____

List two or three facts you already knew about this topic.

1. _____
2. _____
3. _____

List three new bits of information that you learned about the topic from reading this book (include page numbers or incidents from the text to support your answers).

1. _____

   _____
2. _____

   _____
3. _____

   _____

List two or three things you would like to learn more about.

1. _____
2. _____
3. _____

Describe what part of the book you found to be the most interesting. Why was it so interesting?

Summarise the connections you made between this text and other works that we have read in this Term (or in other Terms). Some suggestions (you do not need to answer all the questions!):

Why did you choose *this* book as one of your two for a Written Narration?
Who/what most inspired you in the book? What did you *not* like about the book?
What will you most remember from this book? Who will you try/not try to be like? etc.
This should be a complete paragraph of at least 3-5 sentences.

Experiments for Physics

Experiment for Week 5: Flight

Materials

- Paper

Procedure

1. Fold two different airplanes:
    - One with wide wings
    - One with narrow wings
2. Predict:
    - Which will fly farther?
    - Which will glide for longer?
3. Test them.
    - Measure the distances in centimetres that each plane flew and record this here:
        1. Wide wings: _____ cm
        2. Narrow wings: _____ cm
    - Time how long each plane glided through the air in seconds and record this here:
        1. Wide wings: _____ sec
        2. Narrow wings: _____ sec

Questions to Ask

- What shape worked best?

Explanation

Wing size and shape affect **lift** and **drag**.

Lift: the force that pushes a plane UP into the air. *Air pushing the plane up.*
Drag: the force from the air that slows a plane down as it moves. *Air holding the plane back.*

Experiment for Week 6: Rockets

Materials

- Balloon
- String
- Tape
- Straw
- Two chairs

Procedure

1. Thread the string through a straw.
2. Tie the string tightly between two chairs.
3. Tape an **inflated** balloon **(not tied)** to the straw.
4. Release the balloon.

The balloon **shoots along the string like a rocket**.

Questions to Ask

- What came out of the balloon?
- Which direction did the air go?
- Which direction did the balloon go?

Explanation

Air comes out of the balloon and shoots backward, pushing the balloon forward.
This is **thrust**.

Thrust: the force that pushes a rocket forward.

Experiment for Week 7: Pressure

Materials

- Balloon
- Empty plastic bottle

Procedure

1. Put the balloon inside the bottle, leaving the opening over the bottle opening.
2. Try to blow up the balloon.

Questions to Ask

What happened? (The balloon barely inflates)

Explanation

Air already inside the bottle pushes back. This shows that air takes up space and has **pressure**.
Air is always pushing on things, even though we can't see it.

Pressure: Force spread over an area. Another way of thinking about pressure is *how hard something pushes in one spot.*

Experiment for Week 14: Radioactivity and Nuclear Power

Introduction: Atoms make up all matter in the physical universe. Some atoms are stable, but some are unstable. Unstable atoms change by themselves and release energy.
This is called radioactivity. However, atoms are only radioactive for a certain amount of time—this period is called a "half-life". After this period has passed, they are said to have "decayed".

Materials

- Approximately 40-60 coins of any value
- Bowl

Procedure
Tell your child:

- Each coin represents one atom.
- Heads = atom decayed
- Tails = atom still radioactive

1. Put all coins in the bowl.
2. Shake and spill them onto the table.
3. Remove every *heads* coin. Those atoms have **decayed**.

4. Count how many coins remain.
5. Shake the remaining coins again.
6. Remove heads again.

Repeat several rounds.

Questions to Ask
About how many atoms decay in each round? (About half)
Is there any way we can know which atoms decay vs. which atoms do not decay? (No)

Explanation
This shows radioactive decay and the idea of **half-life**.
Half-life: The time it takes for *half* of the atoms to decay.

Experiment for Week 17: Sound & Music

Materials

- A few rubber bands
- A small box, cup, tissue box or similar

Procedure

1. Stretch one rubber band around the box.
2. Pluck the rubber band like a guitar string.
3. Then experiment by plucking a tighter rubber band, a looser rubber band, and by plucking a few rubber bands at the same time. How does the sound change—which sounds higher? Which sounds lower?

Questions to Ask

- What is the rubber band doing? (Vibrating)
- Which rubber band sounds higher? (The tightest one)

Explanation

Sound happens when something **vibrates** back and forth quickly.

Vibration: A fast back-and-forth movement that makes sound.
Pitch: How high or low a sound is.

Experiment for Week 19: Light

Materials

- Torch
- Book
- Mirror

Procedure

1. Shine the flashlight across the room.
2. Place a book in the path of the light and observe what happens.
3. Then replace the book with a mirror and repeat. Observe what happens.

Questions to Ask

- Why did the light create a shadow? (It cannot go through the book)
- What happened the second time, with the mirror? (Light bounced off the mirror)

Explanation

Light usually travels in straight lines. When light bounces off something (like a mirror), this is called **reflection**.

Light: A form of energy that travels in straight lines and lets us see.
Reflection: When light bounces off a surface.

Experiment for Week 23: Refraction

Materials

- Clear glass or jar
- Water
- Straw/ spoon/ pencil/ other straight object
- Torch/ phone torch

Procedure

1. Fill the glass with water.
2. Put the straw/ other object into the water.
3. Look at the glass from the side.
4. Shine a torch from the side and observe the object.

Questions to Ask

- What do you see? (The object looks like it is broken or bent where it enters the water)

Explanation

Light travels at different speeds in air and water. When light moves from air into water, it changes direction slightly. This bending of light is called **refraction**.

. Refraction: when light bends as it moves through different materials.

Experiment for Week 24: Telescopes

Materials

- 2 magnifying glasses
- Cardboard tube
- Tape
- A distant object to look at

Procedure

1. Hold one magnifying glass near your eye.
2. Hold the second magnifying glass farther away, pointed at a distant object.
3. Move them closer or farther apart until the image looks larger or clearer.
4. If it works well, tape them to the ends of a tube, cut to whatever length worked.

If you only have one magnifying glass, simply use it to magnify objects in your home and discuss how 2 would make this job even easier.

Questions to Ask

- What happened? (The object looks bigger or clearer)

Explanation

One glass **lens** gathers light from the far object. The other helps your eye look at the image. Real telescopes are more carefully designed, but this shows the basic idea.

Lens: A curved piece of glass or plastic that bends light.

Experiment for Week 25: Moving Pictures

Materials

- Small stack of paper
- Pencil

Procedure

1. Draw a simple picture on the bottom page (for example, a stick figure, ball bouncing, bird flapping its wings, etc.).
2. On the next page draw it, but *slightly* changed.
3. Continue drawing small changes on each page.
4. Once your drawing is complete, flip the pages as quickly as possible and watch the animation!

Explanation

Your eyes keep each image for a tiny fraction of a second. When pictures change quickly, your brain connects them into motion, in a concept called **persistence of vision.**

> Persistence of vision**:** Our eyes briefly remember images, allowing pictures shown quickly to look like motion.

Experiment for Week 26: Communicating with Light

Introduction: This experiment demonstrates the principles behind Fibre-optic cables (Internet cables), which send light through glass in the same way.

Materials

- Torch/ phone torch
- Empty, clear plastic bottle
- Water
- A pin or small hole maker/ something to make a hole in the plastic bottle
- Sink or large bowl (to catch water)

Procedure

1. Make a small hole near the bottom of the bottle.
2. Fill the bottle completely with water.
3. Place the bottle over a sink or bowl so water can flow out, but don't release the water yet!
4. Make the room as dark as possible.
5. Shine the torch through the side of the bottle toward the hole.
6. Then let the water out. It should pour out in a smooth stream. Observe the way the light bends with the flow of water.

Questions to Ask

- What happened with the light entered the water? (It slows and bends)

Explanation

Light normally travels in straight lines, but when it enters water it slows down and bends. Inside the stream, the light keeps bouncing off the sides of the water and stays trapped inside.

The light follows the curved stream of water as it falls—it bends along the water instead of going straight. This is called **internal reflection.**

Experiment for Week 28: Discovering Magnetism

Introduction to Physics Term 4
For Term 4, we'll be looking at how electricity and magnetism make machines move—and how that leads to robots and computers! We will begin an 8-week-long series of experiments, in which we will go from the simplest principles of magnetism to building a very basic robot. Don't worry—we'll construct the robot in stages, week by week.

Here is a supply list *for the next 8 weeks*. (You will reuse most supplies every week.)

- 2 AA batteries
- One spool of copper wire: 22, 24 or 26 gauge
    - Available on Amazon. We'll need this in week 29 (next week).
    - If you can, get *insulated* copper wire as this will work a bit better for most experiments—though we will also strip the insulation off at times!
- Small magnets (refrigerator magnets are fine, but the stronger the better!)
    - If finances allow, we'd really suggest purchasing both proper scientific "bar magnets" and neodymium magnets—these will give the best results
- Iron nails
- Paper clips
- Aluminium foil
- Cardboard
- Tape
- Rubber bands
- Paper cups
- Markers
- Scissors

The Experiment for Week 28

Materials

- Magnets
- An assortment of household items such as paper clips, coins, plastic items, wood pieces (to see which items are magnetic and which are not)

Procedure

1. First, use the magnet to determine which items are magnetic and which are not.
2. Separate the magnetic items from the non-magnetic ones.
3. Then, using the magnetic items: Place your magnet under the table and move some of the magnetic items above it. (If your magnet is not very strong, you may need to place the magnet under a piece of cardboard or even a piece of paper.)

Questions to Ask

- What is making (the item) move? (the magnetic force)

Explanation
Magnetism: A force that can attract or repel certain metals.

Experiment for Week 29: Build an Electromagnet

Introduction: This experiment demonstrates that electricity flowing through wire can *create* magnetism—an electromagnet.

Materials

- Iron nail
- Copper wire (insulated if possible)
- AA Battery
- Paper clips

Procedure

1. Test if the nail will pick up the paper clips.
2. Leaving two ends of your wire free (and with enough slack to reach the battery terminals)—wrap the copper wire around the nail 20 times.
3. Touch wire ends to battery terminals.
4. Test if the nail will now pick up the paper clips. How many paper clips will your nail pick up at one time?

_____ paper clips

Keep your electromagnet for next week's experiment.

Explanation

When electricity flows → the nail becomes a magnet. This is called an **electromagnet**.
When disconnected → magnetism disappears.

Electromagnet: A magnet made using electricity.

Experiment for Week 30: Make Your Electromagnet Stronger

Introduction: As we learned last week, electricity flowing through wire can create magnetism. This week, we will change the *circuit* to change the strength of the electromagnet.

Materials (same as last week)

- Your electromagnet from last week, with 20 loops
- 2 more iron nails—the same size as last week
- 2 more sections of copper wire (insulated if possible)
- AA Battery (ideally 2 more batteries, but you can reuse the one battery if needed)
- Paper clips

Procedure

1. Repeat the procedure for making an electromagnet. We'll make 2 more electromagnets.
    - I: Leaving two ends of your wire free (and with enough slack to reach the battery terminals)—wrap the copper wire around the nail 10 times.
    - Touch wire ends to battery terminals.
    - II: Leaving two ends of your wire free (and with enough slack to reach the battery terminals)—wrap the copper wire around the nail 30 times.
    - Touch wire ends to battery terminals.
2. Test how many paper clips each new electromagnet will pick up and record your findings.

Loops of Wire	Paper Clips Picked Up
10	
20	
30	

Questions to Ask

- Does more wire make it stronger? Does less wire make it stronger?
- Optional: try the same procedure with a smaller nail. Then a larger nail. What happens?

Explanation

Electricity must always have a complete path to move—a circuit. If the path/ the loop is open, electricity cannot flow (like when a light switch is *off*). When we changed the **circuit**, the electromagnet changed in strength.

Circuit: A circuit is a closed loop that lets electricity move.

Experiment for Week 31: Magnetism Makes Motion

Introduction: Magnets can create movement. We'll make a magnetic slider to have some fun and demonstrate this principle.

Materials

- 2 magnets, ideally bar magnets with the poles labelled
- Cardboard track (the edges of a cereal box work really well)
- Small, lightweight object, like a bottle cap or square of cardboard
- Tape

Procedure

1. Cut a long strip of cardboard. Fold up the sides slightly to make a small track or channel—so your magnet will not easily fall off the sides.
2. Tape one magnet to the bottom of the small cardboard square or bottle—this will be the slider.
3. Hold the second magnet underneath your track and move it along slowly. You will be pulling along the small object, without touching the object itself.
4. Optional: If your magnets have poles, do the same experiment again, but flip the magnet so the same poles face one another. Now the slider will be pushed away instead of pulled!

Explanation

Magnets can make things move. We'll look at this more next week, where we see motors harness this ability to make things *spin*.

Experiment for Week 32: Build a Simple Motor

Introduction: Motors turn electric energy into movement. We saw magnets help pick up objects and push objects—now we will see magnets be used to make things *spin*.

This is the simplest real electric motor possible! We will see 1) electricity flowing, 2) magnets involved and 3) something spinning continuously. This is called a homopolar motor.

We recommend you watch a video of this first: search: **make a homopolar motor**

Materials

- AA Battery
- Strong magnet—neodymium if possible
- Bare copper wire, cut to about 10-15cm

Procedure

1. Place the magnet on the table and place the battery on top of the magnet.
2. Bend the copper wire so it can:
    - touch the top of the battery
    - and lightly touch the side of the magnet
    - while hanging loosely

    There are many various ideas of how this can be done, ranging from beautiful and intricate, to very basic. Look online for some inspiration: search "homopolar motor"
3. When the wire touches both the top of the battery *and* the magnet—the wire starts spinning rapidly around the battery.

Keep your homopolar motor for next week's experiment. Remove the copper wire for now.

Questions to Ask

- What happens if the wire stops touching the magnet?
- What happens if we flip the magnet?
- Why does the wire spin instead of just moving sideways?

Explanation

Electricity flows through the wire. The wire sits inside a **magnetic field** from the magnet. When **electric current** flows through a magnetic field, it creates a force that pushes the wire sideways. Because the wire is free to move, it starts spinning. This spinning motion is exactly what happens in real **motors**—just with more coils and magnets.

Magnetic Field: The invisible area around a magnet where forces act.
Electric Current: Electric charge flowing through a wire.
Motor: A device that turns electricity into movement.

Experiment for Week 33: Control Your Motor with a Switch

Introduction: A switch is anything that breaks ("off") the electrical circuit—or completes ("on") the electrical circuit.

Materials

- Your homopolar motor from last week
- Aluminium foil
- Cardboard
- Paper clip

Procedure

1. Working on a table, place a small piece of aluminium foil *under* the magnet of your homopolar motor, hanging out over the sides a bit. (This foil will carry the electricity.)
2. Place a paper clip on the table near the battery.
3. Add a piece of copper wire from the negative bottom of the battery (the part on top of the magnet) extending to your paper clip.
4. Move the paper clip so that it can touch or lift off from the copper wire.

Explanation

A switch opens or closes the path that electricity travels through.

Closed path → electricity flows
Open path → electricity stops

When the paper clip touches the foil: the circuit is complete, electricity flows and the wire spins.
When the paperclip lifts off the foil: the circuit is broken and the motor stops.

Experiment for Week 34: Build a Coil Motor

Introduction: We used the simple homopolar motor to teach the principles behind how motors work. We then added a switch to control the motor. This week, we will build a coil motor—which we will turn into a robot next week!

We recommend you watch a video of this first: search: "make a simple coil motor"

Materials

- 1 battery—D is ideal (it is bigger), but an AA will do
- Strong magnet
- Copper wire
- 2 paper clips
- Tape
- Cylindrical object: a marker/ your finger/ the battery/ etc.
- Optional: electrical tape

Procedure

1. Make the coil: wrap copper wire around your cylindrical object 15-20 times, leaving about 10cm on each end straight and exposed. (These two ends will become the axle.)
2. Keep the coil as tight as you can. Take your coil off the cylindrical object, ensuring that it doesn't unravel. Wrap each end around the coil a few times, or tie a knot if that helps, or use electrical tape to help hold your coil tightly in place. You should have about 5cm exposed on each end after this. *Once finished, the coil should look like a wire circle with the two ends extending out from opposite sides.*
3. Prepare the axles: Straighten out the ends of the coil so they are as straight as possible. If you're using insulated copper wire, scrape the insulation completely off one end—and only off the top half of the other end. This will ensure the motor keeps spinning.
4. Make the supports: Unfold the *main, large loop* of your two paper clips so they are straight—but leave the smaller loop of each paper clip intact.
5. Tape the straightened ends of each paper clip to the opposing ends of your battery. The paper clips should be standing up, pointing into the air, while the battery is lying on the table.
6. Insert your coil from step 1-2 into the small loops of your paper clip—so that the coil is suspended in the air over the battery.
7. Add the magnet: Place your magnet on the battery, directly below your coil. Secure with tape. Your coil should begin to spin.

Keep your coil motor for next week's experiment. Take the coil out for now, so it stops spinning.

Explanation

You made a real electric motor:

- coil = electromagnet
- magnet = magnetic field
- electricity flips the magnetism
- the forces create rotation

Experiment for Week 35: Build a Scribble Robot

Introduction: For our final experiment, we will turn our motor into a robot—a Scribble Bot. A robot is a machine that can move and do a task. Robots have power (battery), movement (motor) and control (switch—we'll skip the switch for now). This robot will scribble on some paper using markers.

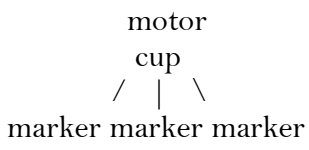
We recommend you watch a video of this first: search: "build a scribble bot"

Materials

- Your coil motor from last week
- A sturdy paper/ plastic cup
- Small object, like a coin, to act as a weight
- Tape
- Any decorations you want for your robot, like eyes or stickers, etc.
- 3 markers & paper for colouring

Procedure

1. Prepare your cup:
    a. Tape a small object, like a coin, bead, or modelling clay, on *one side* of your cup—so that it is off-centred and is not balanced. You want it off-centred—but not so much that it falls over.
    b. Tape 3 markers evenly around your cup. Ensure the caps are off! These are the robot's legs—and what will do the scribbling.



    c. Decorate your robot however you want!
2. Prepare the coil motor:
    a. Tape your motor to the top of your cup. (Optional: Use a cardboard base to rest your motor on, and then attach the base and motor combo to your cup.)
    b. Place the coil back on your motor, so that the coil spins. *Do not tape the coil—it must be free to spin.* You may tape the paper clips, magnet, battery and carboard base (if using).
    c. Watch your robot in action!

Explanation

The motor spins the coil. Because the coil is unbalanced, it shakes the robot. The shaking makes the robot move and draw.

Troubleshooting

If the robot **doesn't move much**, try a bigger weight or a lighter cup.

Optional

See if you can make a control switch next week!

Go raibh maith agat

This ends the Introductory Material for the Modern Period for First-Sixth Class!

We hope that you have an amazing year and please let us know if you have any feedback for us!

God bless you and your family!