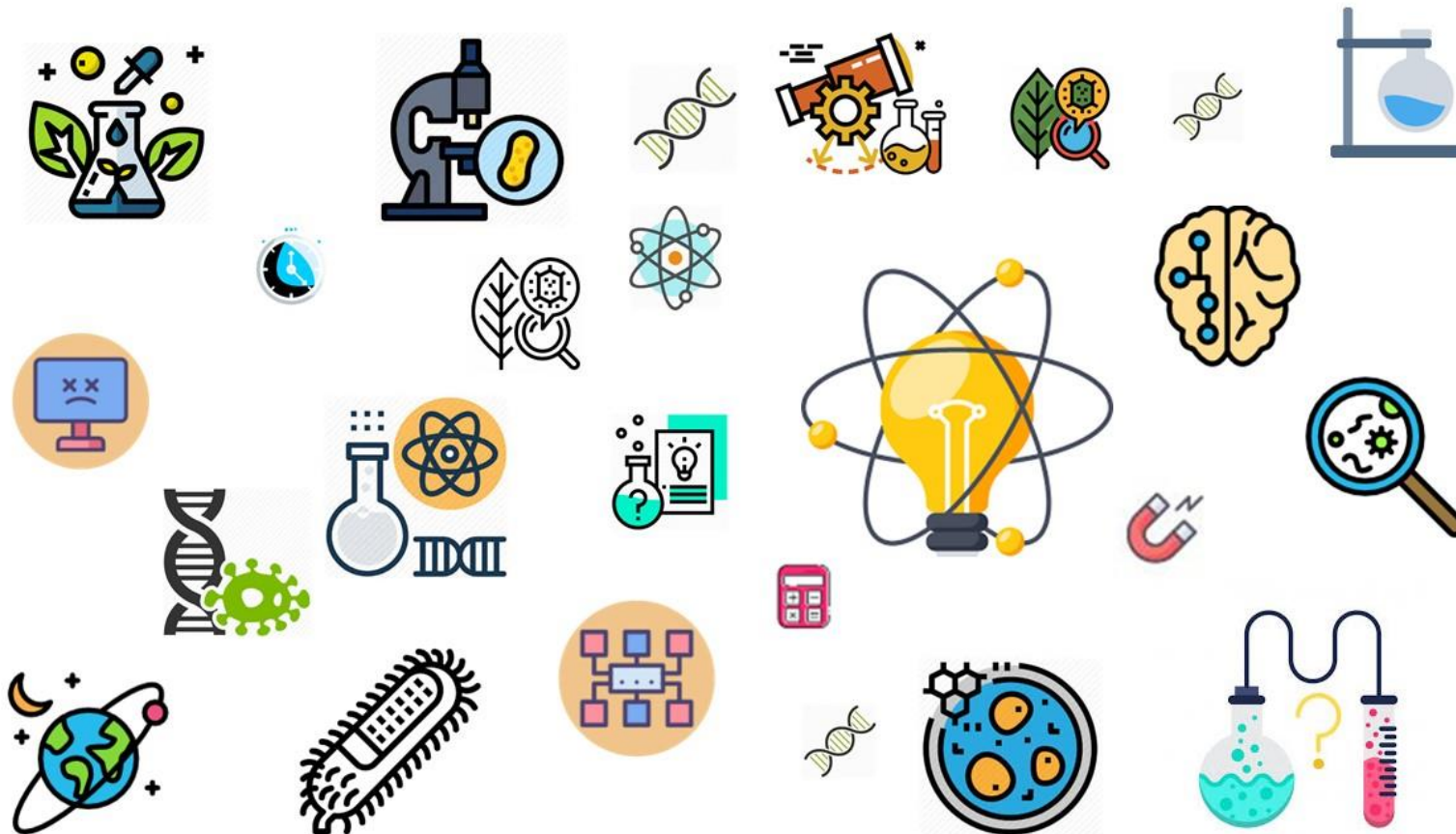




# Secondary School Science E-learning Material



# Introduction

The World Health Organization declared the spread of coronavirus (COVID-19) a “pandemic” on 11 March 2020, adding that this is the first "worldwide spread" of a new disease that can be controlled. The continual spread of infections and the unpredictability of conditions improving in the short-term has caused for drastic measures by governments in a variety of ways, including closure of schools at all levels.

UNESCO estimates that 1.37 billion students are home as a result of COVID-19 school closures with the figures likely to increase if the pandemic continues to spread. For continuity of learning, the Science Sector of the UNESCO Nairobi Office under the supervision of the Regional Director, has compiled a variety of educational resources to assist Secondary School students in Africa especially those from vulnerable and poor communities.

These lecture and illustrative video resources can be accessed freely online and cover many subject areas in Biology to meet the needs of the wider student population.

We shall endeavour to update these education resources from time to time.

# BIOLOGY

Ecosystem	
Biosphere	Food Chain
<a href="https://www.youtube.com/watch?v=YDuvysc_Ubl">https://www.youtube.com/watch?v=YDuvysc_Ubl</a> <a href="https://www.youtube.com/watch?v=il9fNejpo7w">https://www.youtube.com/watch?v=il9fNejpo7w</a> <a href="https://www.youtube.com/watch?v=46ttfUPDMOE">https://www.youtube.com/watch?v=46ttfUPDMOE</a> <a href="https://www.youtube.com/watch?v=C3N_YFuwIUs">https://www.youtube.com/watch?v=C3N_YFuwIUs</a> <a href="https://www.youtube.com/watch?v=P8Es7tigDrE">https://www.youtube.com/watch?v=P8Es7tigDrE</a>	<a href="https://www.youtube.com/watch?v=2lqhJNgn_Wg">https://www.youtube.com/watch?v=2lqhJNgn_Wg</a> <a href="https://www.youtube.com/watch?v=hLq2datPo5M">https://www.youtube.com/watch?v=hLq2datPo5M</a> <a href="https://www.youtube.com/watch?v=bvqN9H3QtTQ">https://www.youtube.com/watch?v=bvqN9H3QtTQ</a> <a href="https://www.youtube.com/watch?v=CZhE2p46vJk">https://www.youtube.com/watch?v=CZhE2p46vJk</a> <a href="https://www.youtube.com/watch?v=-oVavgmveyY">https://www.youtube.com/watch?v=-oVavgmveyY</a>

Plant		
Seedless Vascular Plants	Seed Plants	Germination
<a href="https://www.youtube.com/watch?v=myZKyn36B-0&amp;list=PLX_LascfkALxZPgjMKf6PrcNVmOc2G226">https://www.youtube.com/watch?v=myZKyn36B-0&amp;list=PLX_LascfkALxZPgjMKf6PrcNVmOc2G226</a> <a href="https://www.youtube.com/watch?v=37hEIjXRyFM">https://www.youtube.com/watch?v=37hEIjXRyFM</a> <a href="https://www.youtube.com/watch?v=ZUsscJ24krM">https://www.youtube.com/watch?v=ZUsscJ24krM</a> <a href="https://www.youtube.com/watch?v=7rAXB7TKNQ">https://www.youtube.com/watch?v=7rAXB7TKNQ</a> <a href="https://www.youtube.com/watch?v=gK4nwQaP_PE">https://www.youtube.com/watch?v=gK4nwQaP_PE</a>	<a href="https://www.youtube.com/watch?v=fcLJxAuBvAc">https://www.youtube.com/watch?v=fcLJxAuBvAc</a> <a href="https://www.youtube.com/watch?v=EDjgjBcrUCQ">https://www.youtube.com/watch?v=EDjgjBcrUCQ</a> <a href="https://www.youtube.com/watch?v=Ujy9znrT0sk">https://www.youtube.com/watch?v=Ujy9znrT0sk</a> <a href="https://www.youtube.com/watch?v=iv5JjH4kD1k">https://www.youtube.com/watch?v=iv5JjH4kD1k</a> <a href="https://www.youtube.com/watch?v=-yrifledzw4">https://www.youtube.com/watch?v=-yrifledzw4</a>	<a href="https://www.youtube.com/watch?v=TE6xptjgNR0">https://www.youtube.com/watch?v=TE6xptjgNR0</a> <a href="https://www.youtube.com/watch?v=be5P30G36U">https://www.youtube.com/watch?v=be5P30G36U</a> <a href="https://www.youtube.com/watch?v=IW2ASitTC4o">https://www.youtube.com/watch?v=IW2ASitTC4o</a> <a href="https://www.youtube.com/watch?v=ro8Z9qIIWjM">https://www.youtube.com/watch?v=ro8Z9qIIWjM</a> <a href="https://www.youtube.com/watch?v=cHZJA2zfbRc">https://www.youtube.com/watch?v=cHZJA2zfbRc</a>

Plant Growth	Hormones	Experiment-Plant Growth
<a href="https://www.youtube.com/watch?v=tkFPyue5X3Q">https://www.youtube.com/watch?v=tkFPyue5X3Q</a> <a href="https://www.youtube.com/watch?v=EZ5tU45Ti_g">https://www.youtube.com/watch?v=EZ5tU45Ti_g</a> <a href="https://www.youtube.com/watch?v=zm1YQxzHpfM">https://www.youtube.com/watch?v=zm1YQxzHpfM</a> <a href="https://www.youtube.com/watch?v=NCs0s-Sv-aw&amp;list=PLCzalJYXP5YfGeBS_MQ-tXahNvtWqvoBe">https://www.youtube.com/watch?v=NCs0s-Sv-aw&amp;list=PLCzalJYXP5YfGeBS_MQ-tXahNvtWqvoBe</a> <a href="https://www.youtube.com/watch?v=11QOg4dLa3U">https://www.youtube.com/watch?v=11QOg4dLa3U</a>	<a href="https://www.youtube.com/watch?v=dV9QcGs58l0">https://www.youtube.com/watch?v=dV9QcGs58l0</a> <a href="https://www.youtube.com/watch?v=PxSkuyjZ3MM">https://www.youtube.com/watch?v=PxSkuyjZ3MM</a> <a href="https://www.youtube.com/watch?v=8Ji3g4yp4VE">https://www.youtube.com/watch?v=8Ji3g4yp4VE</a> <a href="https://www.youtube.com/watch?v=YiitTnj92wA">https://www.youtube.com/watch?v=YiitTnj92wA</a>	<a href="https://www.youtube.com/watch?v=a4xSrom6ar4">https://www.youtube.com/watch?v=a4xSrom6ar4</a> <a href="https://www.youtube.com/watch?v=EZ5tU45Ti_g">https://www.youtube.com/watch?v=EZ5tU45Ti_g</a> <a href="https://www.youtube.com/watch?v=3jlpQz4EKBs">https://www.youtube.com/watch?v=3jlpQz4EKBs</a> <a href="https://www.youtube.com/watch?v=Sw46uQcil-A">https://www.youtube.com/watch?v=Sw46uQcil-A</a> <a href="https://www.youtube.com/watch?v=A6r0Xzuptuk">https://www.youtube.com/watch?v=A6r0Xzuptuk</a>
Plant Organs	Photosynthesis and Respiration	Plant reproduction
<a href="https://www.youtube.com/watch?v=AnxDZNdq_0U">https://www.youtube.com/watch?v=AnxDZNdq_0U</a> <a href="https://www.youtube.com/watch?v=IS6cQ1WruTY">https://www.youtube.com/watch?v=IS6cQ1WruTY</a> <a href="https://www.youtube.com/watch?v=OxQka2Bai7M">https://www.youtube.com/watch?v=OxQka2Bai7M</a> <a href="https://www.youtube.com/watch?v=svCLQQwo5PU">https://www.youtube.com/watch?v=svCLQQwo5PU</a>	<a href="https://www.youtube.com/watch?v=0IJMRsTcwcg">https://www.youtube.com/watch?v=0IJMRsTcwcg</a> <a href="https://www.youtube.com/watch?v=xmfhKbmQhq0">https://www.youtube.com/watch?v=xmfhKbmQhq0</a> <a href="https://www.youtube.com/watch?v=JUmT24R8CyA">https://www.youtube.com/watch?v=JUmT24R8CyA</a> <a href="https://www.youtube.com/watch?v=3XlyweZg6Sw">https://www.youtube.com/watch?v=3XlyweZg6Sw</a> <a href="https://www.youtube.com/watch?v=sQK3Yr4Sc_k">https://www.youtube.com/watch?v=sQK3Yr4Sc_k</a> <a href="https://www.youtube.com/watch?v=PiAUPg4UrrE">https://www.youtube.com/watch?v=PiAUPg4UrrE</a>	<a href="https://www.youtube.com/watch?v=HLYPm2idSTE">https://www.youtube.com/watch?v=HLYPm2idSTE</a> <a href="https://www.youtube.com/watch?v=ExaQ8shhkW8">https://www.youtube.com/watch?v=ExaQ8shhkW8</a> <a href="https://www.youtube.com/watch?v=HP21hIVJhWI">https://www.youtube.com/watch?v=HP21hIVJhWI</a>
Plants Tissue Culture		
<a href="https://www.youtube.com/watch?v=Cm-41l8bY7o">https://www.youtube.com/watch?v=Cm-41l8bY7o</a> <a href="https://www.youtube.com/watch?v=ykKs5icYwq0">https://www.youtube.com/watch?v=ykKs5icYwq0</a> <a href="https://www.youtube.com/watch?v=xuwV3ywCxW8">https://www.youtube.com/watch?v=xuwV3ywCxW8</a> <a href="https://www.youtube.com/watch?v=SKxgPX0TH4M">https://www.youtube.com/watch?v=SKxgPX0TH4M</a>		

## Animal

Cell	Animal Classification	Animal Behavior
<a href="https://www.youtube.com/watch?v=cj8dDTHGJBY">https://www.youtube.com/watch?v=cj8dDTHGJBY</a> <a href="https://www.youtube.com/watch?v=1aJBToJrlvA">https://www.youtube.com/watch?v=1aJBToJrlvA</a> <a href="https://www.youtube.com/watch?v=FjF_PO7QVGg">https://www.youtube.com/watch?v=FjF_PO7QVGg</a> <a href="https://www.youtube.com/watch?v=nR-lsNDVhcY">https://www.youtube.com/watch?v=nR-lsNDVhcY</a>	<a href="https://www.youtube.com/watch?v=L6anmd7DnYw">https://www.youtube.com/watch?v=L6anmd7DnYw</a> <a href="https://www.youtube.com/watch?v=YpP3UGE4LSO">https://www.youtube.com/watch?v=YpP3UGE4LSO</a> <a href="https://www.youtube.com/watch?v=mRidGna-V4E">https://www.youtube.com/watch?v=mRidGna-V4E</a> <a href="https://www.youtube.com/watch?v=ZSsZ5TkWHQg">https://www.youtube.com/watch?v=ZSsZ5TkWHQg</a>	<a href="https://www.youtube.com/watch?v=K4cKnOGJZII">https://www.youtube.com/watch?v=K4cKnOGJZII</a> <a href="https://www.youtube.com/watch?v=xY3iY0kDfbs">https://www.youtube.com/watch?v=xY3iY0kDfbs</a> <a href="https://www.youtube.com/watch?v=6hREwakXmAo">https://www.youtube.com/watch?v=6hREwakXmAo</a> <a href="https://www.youtube.com/watch?v=SQhSuNEDArg">https://www.youtube.com/watch?v=SQhSuNEDArg</a>
Insects Reproduction	Reproduction in Amphibians	Reproduction in Birds
<a href="https://www.youtube.com/watch?v=MQnAdSLNRpo">https://www.youtube.com/watch?v=MQnAdSLNRpo</a> <a href="https://www.youtube.com/watch?v=NoMBSm8Kkjl">https://www.youtube.com/watch?v=NoMBSm8Kkjl</a> <a href="https://www.youtube.com/watch?v=lopc1CrGCX4">https://www.youtube.com/watch?v=lopc1CrGCX4</a> <a href="https://www.youtube.com/watch?v=judfvUeoUI">https://www.youtube.com/watch?v=judfvUeoUI</a>	<a href="https://www.youtube.com/watch?v=gmlaclb3K2o">https://www.youtube.com/watch?v=gmlaclb3K2o</a> <a href="https://www.youtube.com/watch?v=L-7GoJSTE2o">https://www.youtube.com/watch?v=L-7GoJSTE2o</a> <a href="https://www.youtube.com/watch?v=rJ00xIFs9ls">https://www.youtube.com/watch?v=rJ00xIFs9ls</a> <a href="https://www.youtube.com/watch?v=AqkU-el30oU">https://www.youtube.com/watch?v=AqkU-el30oU</a> <a href="https://www.youtube.com/watch?v=kBFJ7HtbizA">https://www.youtube.com/watch?v=kBFJ7HtbizA</a>	<a href="https://www.youtube.com/watch?v=nEXeNfY8vtE">https://www.youtube.com/watch?v=nEXeNfY8vtE</a> <a href="https://www.youtube.com/watch?v=Hd8kmLSnH2M">https://www.youtube.com/watch?v=Hd8kmLSnH2M</a> <a href="https://www.youtube.com/watch?v=OvyvJzzMVkl">https://www.youtube.com/watch?v=OvyvJzzMVkl</a> <a href="https://www.youtube.com/watch?v=5YgL9fU7eVM">https://www.youtube.com/watch?v=5YgL9fU7eVM</a>

## Microorganisms

Bacteria	Fungi	Viruses
<a href="https://www.youtube.com/watch?v=0TdQeTM0xec">https://www.youtube.com/watch?v=0TdQeTM0xec</a> <a href="https://www.youtube.com/watch?v=fzlKJpcfXfo">https://www.youtube.com/watch?v=fzlKJpcfXfo</a> <a href="https://www.youtube.com/watch?v=IzHdQ0n6o7E">https://www.youtube.com/watch?v=IzHdQ0n6o7E</a> <a href="https://www.youtube.com/watch?v=OBej7rFyN7U">https://www.youtube.com/watch?v=OBej7rFyN7U</a> <a href="https://www.youtube.com/watch?v=8lJRzcPC9wg">https://www.youtube.com/watch?v=8lJRzcPC9wg</a>	<a href="https://www.youtube.com/watch?v=m4DUZhnNo4s">https://www.youtube.com/watch?v=m4DUZhnNo4s</a> <a href="https://www.youtube.com/watch?v=VVuYGkk_I8s">https://www.youtube.com/watch?v=VVuYGkk_I8s</a> <a href="https://www.youtube.com/watch?v=QcuPKy_SIng">https://www.youtube.com/watch?v=QcuPKy_SIng</a> <a href="https://www.youtube.com/watch?v=hZd0Alj_qZo">https://www.youtube.com/watch?v=hZd0Alj_qZo</a> <a href="https://www.youtube.com/watch?v=f3hFHFyzGjY">https://www.youtube.com/watch?v=f3hFHFyzGjY</a>	<a href="https://www.youtube.com/watch?v=8FqITsIU22s">https://www.youtube.com/watch?v=8FqITsIU22s</a> <a href="https://www.youtube.com/watch?v=rWkNvIUthBI">https://www.youtube.com/watch?v=rWkNvIUthBI</a> <a href="https://www.youtube.com/watch?v=mWeJ0lakG_A">https://www.youtube.com/watch?v=mWeJ0lakG_A</a> <a href="https://www.youtube.com/watch?v=4kIKySxUYuk">https://www.youtube.com/watch?v=4kIKySxUYuk</a> <a href="https://www.youtube.com/watch?v=bCDIS690q6k">https://www.youtube.com/watch?v=bCDIS690q6k</a>
Differences Between Bacteria, Viruses, and Fungi		
<a href="https://www.youtube.com/watch?v=ZPJPNW1_904">https://www.youtube.com/watch?v=ZPJPNW1_904</a> <a href="https://www.youtube.com/watch?v=5yKQYM3G5nM">https://www.youtube.com/watch?v=5yKQYM3G5nM</a> <a href="https://www.youtube.com/watch?v=NlrhcQAPMi4">https://www.youtube.com/watch?v=NlrhcQAPMi4</a> <a href="https://www.youtube.com/watch?v=jANYk2-eYvk">https://www.youtube.com/watch?v=jANYk2-eYvk</a>		

## Human

Cell	Organ	Respiratory System
<a href="https://www.youtube.com/watch?v=P4gz6DrZ00I">https://www.youtube.com/watch?v=P4gz6DrZ00I</a> <a href="https://www.youtube.com/watch?v=8vo59AKzU4Q">https://www.youtube.com/watch?v=8vo59AKzU4Q</a> <a href="https://www.youtube.com/watch?v=cAQpchyTXYo">https://www.youtube.com/watch?v=cAQpchyTXYo</a>	<a href="https://www.youtube.com/watch?v=i5aXwiC3wWc">https://www.youtube.com/watch?v=i5aXwiC3wWc</a> <a href="https://www.youtube.com/watch?v=8Nb9E62p2c0">https://www.youtube.com/watch?v=8Nb9E62p2c0</a> <a href="https://www.youtube.com/watch?v=LReJG7PrXFY">https://www.youtube.com/watch?v=LReJG7PrXFY</a>	<a href="https://www.youtube.com/watch?v=fQsgZloXNPY">https://www.youtube.com/watch?v=fQsgZloXNPY</a> <a href="https://www.youtube.com/watch?v=UTR1IsX55dc">https://www.youtube.com/watch?v=UTR1IsX55dc</a> <a href="https://www.youtube.com/watch?v=bHZsvBdUC2I">https://www.youtube.com/watch?v=bHZsvBdUC2I</a> <a href="https://www.youtube.com/watch?v=kacMYexDgHg">https://www.youtube.com/watch?v=kacMYexDgHg</a>
Digestive System	Cardiovascular System	Urinary System
<a href="https://www.youtube.com/watch?v=Og5xAdC8EUI">https://www.youtube.com/watch?v=Og5xAdC8EUI</a> <a href="https://www.youtube.com/watch?v=4ui4oSHHzA">https://www.youtube.com/watch?v=4ui4oSHHzA</a> <a href="https://www.youtube.com/watch?v=vMI46qGQMDw">https://www.youtube.com/watch?v=vMI46qGQMDw</a> <a href="https://www.youtube.com/watch?v=s06XzaKqELk">https://www.youtube.com/watch?v=s06XzaKqELk</a> <a href="https://www.youtube.com/watch?v=nM5kMSjBrmw">https://www.youtube.com/watch?v=nM5kMSjBrmw</a>	<a href="https://www.youtube.com/watch?v=CWFyxn0qDEU">https://www.youtube.com/watch?v=CWFyxn0qDEU</a> <a href="https://www.youtube.com/watch?v=qmNCJxpsr0">https://www.youtube.com/watch?v=qmNCJxpsr0</a> <a href="https://www.youtube.com/watch?v=SwHjw07Bnsl">https://www.youtube.com/watch?v=SwHjw07Bnsl</a> <a href="https://www.youtube.com/watch?v=NJzJKvkWWDC">https://www.youtube.com/watch?v=NJzJKvkWWDC</a> <a href="https://www.youtube.com/watch?v=-s5iCoCaofc">https://www.youtube.com/watch?v=-s5iCoCaofc</a>	<a href="https://www.youtube.com/watch?v=W1fw2qQ9Syo">https://www.youtube.com/watch?v=W1fw2qQ9Syo</a> <a href="https://www.youtube.com/watch?v=1NtPjzm1-74">https://www.youtube.com/watch?v=1NtPjzm1-74</a> <a href="https://www.youtube.com/watch?v=l128tW1H5a8">https://www.youtube.com/watch?v=l128tW1H5a8</a> <a href="https://www.youtube.com/watch?v=2_7Q1xQ-NWU">https://www.youtube.com/watch?v=2_7Q1xQ-NWU</a> <a href="https://www.youtube.com/watch?v=H2VkW9L5QSU">https://www.youtube.com/watch?v=H2VkW9L5QSU</a>
Integumentary System	Muscular System	Endocrine System
<a href="https://www.youtube.com/watch?v=p4hnFf_jmvU">https://www.youtube.com/watch?v=p4hnFf_jmvU</a> <a href="https://www.youtube.com/watch?v=Orumw-PyNjw">https://www.youtube.com/watch?v=Orumw-PyNjw</a> <a href="https://www.youtube.com/watch?v=0xPICKTKhzY">https://www.youtube.com/watch?v=0xPICKTKhzY</a> <a href="https://www.youtube.com/watch?v=z5VnOS9Ke3g">https://www.youtube.com/watch?v=z5VnOS9Ke3g</a> <a href="https://www.youtube.com/watch?v=IGLKpR76Nc8">https://www.youtube.com/watch?v=IGLKpR76Nc8</a>	<a href="https://www.youtube.com/watch?v=21bgO104QVU">https://www.youtube.com/watch?v=21bgO104QVU</a> <a href="https://www.youtube.com/watch?v=rMcg9YzNSEs">https://www.youtube.com/watch?v=rMcg9YzNSEs</a> <a href="https://www.youtube.com/watch?v=VVL-8zr2hk4">https://www.youtube.com/watch?v=VVL-8zr2hk4</a> <a href="https://www.youtube.com/watch?v=Ktv-CaOt6UQ">https://www.youtube.com/watch?v=Ktv-CaOt6UQ</a> <a href="https://www.youtube.com/watch?v=jqy0i1KXUO4">https://www.youtube.com/watch?v=jqy0i1KXUO4</a>	<a href="https://www.youtube.com/watch?v=8TveCTps_Xw">https://www.youtube.com/watch?v=8TveCTps_Xw</a> <a href="https://www.youtube.com/watch?v=-S_vQZDH9hY">https://www.youtube.com/watch?v=-S_vQZDH9hY</a> <a href="https://www.youtube.com/watch?v=BvpPCn1rwsW">https://www.youtube.com/watch?v=BvpPCn1rwsW</a> <a href="https://www.youtube.com/watch?v=WVrIHH14q3o">https://www.youtube.com/watch?v=WVrIHH14q3o</a> <a href="https://www.youtube.com/watch?v=xry7vtBjYK4">https://www.youtube.com/watch?v=xry7vtBjYK4</a>

Nervous System	Reproductive system	Humans Evolution
<a href="https://www.youtube.com/watch?v=jaWrMYChc5A">https://www.youtube.com/watch?v=jaWrMYChc5A</a> <a href="https://www.youtube.com/watch?v=44B0ms3XPKU">https://www.youtube.com/watch?v=44B0ms3XPKU</a> <a href="https://www.youtube.com/watch?v=NK40sGPPEQs">https://www.youtube.com/watch?v=NK40sGPPEQs</a> <a href="https://www.youtube.com/watch?v=qPix_X-9t7E">https://www.youtube.com/watch?v=qPix_X-9t7E</a> <a href="https://www.youtube.com/watch?v=0yXMGQaVVXg">https://www.youtube.com/watch?v=0yXMGQaVVXg</a>	<a href="https://www.youtube.com/watch?v=RFDatCchpus">https://www.youtube.com/watch?v=RFDatCchpus</a> <a href="https://www.youtube.com/watch?v=mC3cY4tNpBw">https://www.youtube.com/watch?v=mC3cY4tNpBw</a>	<a href="https://www.youtube.com/watch?v=Vf_dDp7drFg">https://www.youtube.com/watch?v=Vf_dDp7drFg</a> <a href="https://www.youtube.com/watch?v=ehV-MmuvVMU">https://www.youtube.com/watch?v=ehV-MmuvVMU</a> <a href="https://www.youtube.com/watch?v=UPggkvB9_dc">https://www.youtube.com/watch?v=UPggkvB9_dc</a> <a href="https://www.youtube.com/watch?v=TEYiwDKKzyc">https://www.youtube.com/watch?v=TEYiwDKKzyc</a> <a href="https://www.youtube.com/watch?v=KJv6LfZn8YY">https://www.youtube.com/watch?v=KJv6LfZn8YY</a>
Human Reproduction		
<a href="https://www.youtube.com/watch?v=m1hZrIPGw9c">https://www.youtube.com/watch?v=m1hZrIPGw9c</a> <a href="https://www.youtube.com/watch?v=v8mRNJihA-k">https://www.youtube.com/watch?v=v8mRNJihA-k</a> <a href="https://www.youtube.com/watch?v=AKy0Gvu8KNE">https://www.youtube.com/watch?v=AKy0Gvu8KNE</a> <a href="https://www.youtube.com/watch?v=deQW85TeYwl&amp;list=PL2AGQm6bx5CB_eCSQQ36pQZCoTLZxJAZC">https://www.youtube.com/watch?v=deQW85TeYwl&amp;list=PL2AGQm6bx5CB_eCSQQ36pQZCoTLZxJAZC</a> <a href="https://www.youtube.com/watch?v=ikaogWXgMos">https://www.youtube.com/watch?v=ikaogWXgMos</a>		



## Gene

Genetics Basics	the Development of Genetic Engineering	Sex Determination
<a href="https://www.youtube.com/watch?v=ictAm2wSwY">https://www.youtube.com/watch?v=ictAm2wSwY</a> <a href="https://www.youtube.com/watch?v=mcEV3m9SG9M">https://www.youtube.com/watch?v=mcEV3m9SG9M</a> <a href="https://www.youtube.com/watch?v=eYnIHAYFDRU">https://www.youtube.com/watch?v=eYnIHAYFDRU</a> <a href="https://www.youtube.com/watch?v=pv3Kj0UjiLE">https://www.youtube.com/watch?v=pv3Kj0UjiLE</a> <a href="https://www.youtube.com/watch?v=jmkcKd4bfrQ">https://www.youtube.com/watch?v=jmkcKd4bfrQ</a> <a href="https://www.youtube.com/watch?v=Im0RXMFlenU">https://www.youtube.com/watch?v=Im0RXMFlenU</a>	<a href="https://www.youtube.com/watch?v=k1a2larfMIA">https://www.youtube.com/watch?v=k1a2larfMIA</a> <a href="https://www.youtube.com/watch?v=I5_2c52OPFw">https://www.youtube.com/watch?v=I5_2c52OPFw</a> <a href="https://www.youtube.com/watch?v=ONs9FCY74p0">https://www.youtube.com/watch?v=ONs9FCY74p0</a> <a href="https://www.youtube.com/watch?v=jAhjPd4uNFY">https://www.youtube.com/watch?v=jAhjPd4uNFY</a>	<a href="https://www.youtube.com/watch?v=D2hVguyj2E8">https://www.youtube.com/watch?v=D2hVguyj2E8</a> <a href="https://www.youtube.com/watch?v=D2hVguyj2E8">https://www.youtube.com/watch?v=D2hVguyj2E8</a> <a href="https://www.youtube.com/watch?v=AzkXQBzZEIE">https://www.youtube.com/watch?v=AzkXQBzZEIE</a> <a href="https://www.youtube.com/watch?v=f2oD9-WBFE">https://www.youtube.com/watch?v=f2oD9-WBFE</a>
Gene Variation	Gene Mutation	Hybrid Rice
<a href="https://www.youtube.com/watch?v=jUHokSPkzT8">https://www.youtube.com/watch?v=jUHokSPkzT8</a> <a href="https://www.youtube.com/watch?v=11iYk0Yrx3g">https://www.youtube.com/watch?v=11iYk0Yrx3g</a> <a href="https://www.youtube.com/watch?v=NH0bJGG9m-l">https://www.youtube.com/watch?v=NH0bJGG9m-l</a> <a href="https://www.youtube.com/watch?v=RM_AjkXof1o">https://www.youtube.com/watch?v=RM_AjkXof1o</a>	<a href="https://www.youtube.com/watch?v=vl6Vlf2thvI">https://www.youtube.com/watch?v=vl6Vlf2thvI</a> <a href="https://www.youtube.com/watch?v=xYOK-yzUWSI">https://www.youtube.com/watch?v=xYOK-yzUWSI</a> <a href="https://www.youtube.com/watch?v=s3Lo4qGYba4">https://www.youtube.com/watch?v=s3Lo4qGYba4</a> <a href="https://www.youtube.com/watch?v=eDbK0cxKKsk">https://www.youtube.com/watch?v=eDbK0cxKKsk</a>	<a href="https://www.youtube.com/watch?v=2w5UwBUfCOE">https://www.youtube.com/watch?v=2w5UwBUfCOE</a> <a href="https://www.youtube.com/watch?v=QInU8-TaJJs">https://www.youtube.com/watch?v=QInU8-TaJJs</a> <a href="https://www.youtube.com/watch?v=zG7TH05Avvo">https://www.youtube.com/watch?v=zG7TH05Avvo</a> <a href="https://www.youtube.com/watch?v=XHjAM9kF0g8">https://www.youtube.com/watch?v=XHjAM9kF0g8</a> <a href="https://www.youtube.com/watch?v=1WK6gb3TzDs">https://www.youtube.com/watch?v=1WK6gb3TzDs</a>

## Evolution

Origin of Life	Extraterrestrial Life/Alien Life	Darwin's Evolution Theory
<a href="https://www.youtube.com/watch?v=de1hiS_XjWg">https://www.youtube.com/watch?v=de1hiS_XjWg</a> <a href="https://www.youtube.com/watch?v=xyhZcEY5PCQ&amp;t=120s">https://www.youtube.com/watch?v=xyhZcEY5PCQ&amp;t=120s</a> <a href="https://www.youtube.com/watch?v=_uAJY1mqtW4">https://www.youtube.com/watch?v=_uAJY1mqtW4</a> <a href="https://www.youtube.com/watch?v=fgQLyqWacBA">https://www.youtube.com/watch?v=fgQLyqWacBA</a>	<a href="https://www.youtube.com/watch?v=cuZrQUY5AF4">https://www.youtube.com/watch?v=cuZrQUY5AF4</a> <a href="https://www.youtube.com/watch?v=AEq793g8lvc">https://www.youtube.com/watch?v=AEq793g8lvc</a> <a href="https://www.youtube.com/watch?v=cl_YuKk9mzg">https://www.youtube.com/watch?v=cl_YuKk9mzg</a>	<a href="https://www.youtube.com/watch?v=oRzjiXyQxCQ">https://www.youtube.com/watch?v=oRzjiXyQxCQ</a> <a href="https://www.youtube.com/watch?v=w56u2gv8XLs">https://www.youtube.com/watch?v=w56u2gv8XLs</a> <a href="https://www.youtube.com/watch?v=sN_ALbAkvus">https://www.youtube.com/watch?v=sN_ALbAkvus</a> <a href="https://www.youtube.com/watch?v=vnxugS3jenY">https://www.youtube.com/watch?v=vnxugS3jenY</a>
Species	Natural Selection	
<a href="https://www.youtube.com/watch?v=Z7Zd0smPeAg">https://www.youtube.com/watch?v=Z7Zd0smPeAg</a> <a href="https://www.youtube.com/watch?v=i6YRf_Ffql">https://www.youtube.com/watch?v=i6YRf_Ffql</a> <a href="https://www.youtube.com/watch?v=Tmt4zrDK3dA">https://www.youtube.com/watch?v=Tmt4zrDK3dA</a> <a href="https://www.youtube.com/watch?v=9fOfFIMe6ek">https://www.youtube.com/watch?v=9fOfFIMe6ek</a>	<a href="https://www.youtube.com/watch?v=7VM9YxmULuo">https://www.youtube.com/watch?v=7VM9YxmULuo</a> <a href="https://www.youtube.com/watch?v=aTftyFboC_M">https://www.youtube.com/watch?v=aTftyFboC_M</a> <a href="https://www.youtube.com/watch?v=0SCjhl86grU">https://www.youtube.com/watch?v=0SCjhl86grU</a> <a href="https://www.youtube.com/watch?v=R6La6_klr9g">https://www.youtube.com/watch?v=R6La6_klr9g</a> <a href="https://www.youtube.com/watch?v=HaPWJqy6TDk">https://www.youtube.com/watch?v=HaPWJqy6TDk</a>	

Cell		
Plant Cell	Animal Cell	Animal Cell vs Plant Cell
<a href="https://www.youtube.com/watch?v=9UvlqAVCoqY">https://www.youtube.com/watch?v=9UvlqAVCoqY</a> <a href="https://www.youtube.com/watch?v=IWU6ma5405U">https://www.youtube.com/watch?v=IWU6ma5405U</a> <a href="https://www.youtube.com/watch?v=TvQNRyWIKws">https://www.youtube.com/watch?v=TvQNRyWIKws</a> <a href="https://www.youtube.com/watch?v=aM3ZfC1K6W8">https://www.youtube.com/watch?v=aM3ZfC1K6W8</a>	<a href="https://www.youtube.com/watch?v=cj8dDTHGJBY">https://www.youtube.com/watch?v=cj8dDTHGJBY</a> <a href="https://www.youtube.com/watch?v=1aJBToJrlvA">https://www.youtube.com/watch?v=1aJBToJrlvA</a> <a href="https://www.youtube.com/watch?v=FjF_PO7QVGg">https://www.youtube.com/watch?v=FjF_PO7QVGg</a> <a href="https://www.youtube.com/watch?v=nR-lsNDVhcY">https://www.youtube.com/watch?v=nR-lsNDVhcY</a>	<a href="https://www.youtube.com/watch?v=LdKcTtabr6Y">https://www.youtube.com/watch?v=LdKcTtabr6Y</a> <a href="https://www.youtube.com/watch?v=8llzKri08kk">https://www.youtube.com/watch?v=8llzKri08kk</a> <a href="https://www.youtube.com/watch?v=V6s0xOTNmT4">https://www.youtube.com/watch?v=V6s0xOTNmT4</a> <a href="https://www.youtube.com/watch?v=vwAJ8ByQH2U">https://www.youtube.com/watch?v=vwAJ8ByQH2U</a> <a href="https://www.youtube.com/watch?v=ApvxVtBJxd0">https://www.youtube.com/watch?v=ApvxVtBJxd0</a> <a href="https://www.youtube.com/watch?v=HBvfBB_oSTc">https://www.youtube.com/watch?v=HBvfBB_oSTc</a>
Cell Structure and Its Function	DNA vs RNA	DNA Replication
<a href="https://www.youtube.com/watch?v=9qttMZaULig">https://www.youtube.com/watch?v=9qttMZaULig</a> <a href="https://www.youtube.com/watch?v=1Z9pqST72is">https://www.youtube.com/watch?v=1Z9pqST72is</a> <a href="https://www.youtube.com/watch?v=Rp4XPgWNc_Q">https://www.youtube.com/watch?v=Rp4XPgWNc_Q</a> <a href="https://www.youtube.com/watch?v=hRvh26xu-SE">https://www.youtube.com/watch?v=hRvh26xu-SE</a>	<a href="https://www.youtube.com/watch?v=ruUf7ntRCK8">https://www.youtube.com/watch?v=ruUf7ntRCK8</a> <a href="https://www.youtube.com/watch?v=0lZRAShqft0">https://www.youtube.com/watch?v=0lZRAShqft0</a> <a href="https://www.youtube.com/watch?v=Wdt39RLmE_s">https://www.youtube.com/watch?v=Wdt39RLmE_s</a> <a href="https://www.youtube.com/watch?v=JQByjprj_mA">https://www.youtube.com/watch?v=JQByjprj_mA</a>	<a href="https://www.youtube.com/watch?v=Qqe4thU-os8">https://www.youtube.com/watch?v=Qqe4thU-os8</a> <a href="https://www.youtube.com/watch?v=TNKWgcFPHqw">https://www.youtube.com/watch?v=TNKWgcFPHqw</a> <a href="https://www.youtube.com/watch?v=8kK2zwwjRVOM">https://www.youtube.com/watch?v=8kK2zwwjRVOM</a> <a href="https://www.youtube.com/watch?v=3jslVQDGkLU">https://www.youtube.com/watch?v=3jslVQDGkLU</a>
RNA Replication	Membrane	Organelle
<a href="https://www.youtube.com/watch?v=35J7D7Yop_E">https://www.youtube.com/watch?v=35J7D7Yop_E</a> <a href="https://www.youtube.com/watch?v=09PHtVz99wE">https://www.youtube.com/watch?v=09PHtVz99wE</a> <a href="https://www.youtube.com/watch?v=THw34p66xIk">https://www.youtube.com/watch?v=THw34p66xIk</a>	<a href="https://www.youtube.com/watch?v=bkVMdxdpFkSY">https://www.youtube.com/watch?v=bkVMdxdpFkSY</a> <a href="https://www.youtube.com/watch?v=LXaPt9i9hqk">https://www.youtube.com/watch?v=LXaPt9i9hqk</a> <a href="https://www.youtube.com/watch?v=y31DIJ6uGgE">https://www.youtube.com/watch?v=y31DIJ6uGgE</a> <a href="https://www.youtube.com/watch?v=QpcACa39YtA">https://www.youtube.com/watch?v=QpcACa39YtA</a>	<a href="https://www.youtube.com/watch?v=Ogxpuq-qIW0">https://www.youtube.com/watch?v=Ogxpuq-qIW0</a> <a href="https://www.youtube.com/watch?v=ff9Ts7mKuBM">https://www.youtube.com/watch?v=ff9Ts7mKuBM</a> <a href="https://www.youtube.com/watch?v=WcCwB_Xb_L4">https://www.youtube.com/watch?v=WcCwB_Xb_L4</a>

<b>Cell Nucleus</b>	<b>Enzyme</b>	<b>ATP and Cell Respiration</b>
<a href="https://www.youtube.com/watch?v=gGeC0ntvxR8">https://www.youtube.com/watch?v=gGeC0ntvxR8</a> <a href="https://www.youtube.com/watch?v=nD2Fd0KyICA">https://www.youtube.com/watch?v=nD2Fd0KyICA</a> <a href="https://www.youtube.com/watch?v=fV-sG3od1k0">https://www.youtube.com/watch?v=fV-sG3od1k0</a> <a href="https://www.youtube.com/watch?v=QV3mOU84QNc">https://www.youtube.com/watch?v=QV3mOU84QNc</a>	<a href="https://www.youtube.com/watch?v=rIH1ym916Fo">https://www.youtube.com/watch?v=rIH1ym916Fo</a> <a href="https://www.youtube.com/watch?v=O-3laxNSPog">https://www.youtube.com/watch?v=O-3laxNSPog</a> <a href="https://www.youtube.com/watch?v=qgVFkRn8f10">https://www.youtube.com/watch?v=qgVFkRn8f10</a> <a href="https://www.youtube.com/watch?v=ok9esggzN18">https://www.youtube.com/watch?v=ok9esggzN18</a>	<a href="https://www.youtube.com/watch?v=i0oYOcXsIBE">https://www.youtube.com/watch?v=i0oYOcXsIBE</a> <a href="https://www.youtube.com/watch?v=oMyNEFG1nil">https://www.youtube.com/watch?v=oMyNEFG1nil</a> <a href="https://www.youtube.com/watch?v=00jbG_cfGuQ">https://www.youtube.com/watch?v=00jbG_cfGuQ</a> <a href="https://www.youtube.com/watch?v=RjQw_hF1ILQ">https://www.youtube.com/watch?v=RjQw_hF1ILQ</a>
<b>Cell Proliferation</b>	<b>Cellular Specialization/Differentiation</b>	<b>Cell Senescence and Apoptosis</b>
<a href="https://www.youtube.com/watch?v=Ct18nkmlFaw">https://www.youtube.com/watch?v=Ct18nkmlFaw</a> <a href="https://www.youtube.com/watch?v=Sdwj61HgrTc">https://www.youtube.com/watch?v=Sdwj61HgrTc</a> <a href="https://www.youtube.com/watch?v=Cr2FDpg3c2o">https://www.youtube.com/watch?v=Cr2FDpg3c2o</a>	<a href="https://www.youtube.com/watch?v=t3g26p9Mh_k">https://www.youtube.com/watch?v=t3g26p9Mh_k</a> <a href="https://www.youtube.com/watch?v=HgHaqF9tLgw">https://www.youtube.com/watch?v=HgHaqF9tLgw</a> <a href="https://www.youtube.com/watch?v=X0GMp8oM_2E">https://www.youtube.com/watch?v=X0GMp8oM_2E</a> <a href="https://www.youtube.com/watch?v=YtvL-LQIPrU">https://www.youtube.com/watch?v=YtvL-LQIPrU</a>	<a href="https://www.youtube.com/watch?v=cp_qJI9y-lc">https://www.youtube.com/watch?v=cp_qJI9y-lc</a> <a href="https://www.youtube.com/watch?v=m1PgMVju3ck">https://www.youtube.com/watch?v=m1PgMVju3ck</a> <a href="https://www.youtube.com/watch?v=wkWLmlSUlqg">https://www.youtube.com/watch?v=wkWLmlSUlqg</a> <a href="https://www.youtube.com/watch?v=-vmtK-bAC5E">https://www.youtube.com/watch?v=-vmtK-bAC5E</a>

# Sustainable Development begins with Education



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Educational, Scientific and  
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Natural  
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<https://en.unesco.org/node/315264>