laboratorio d'arte

dossier pedagogico

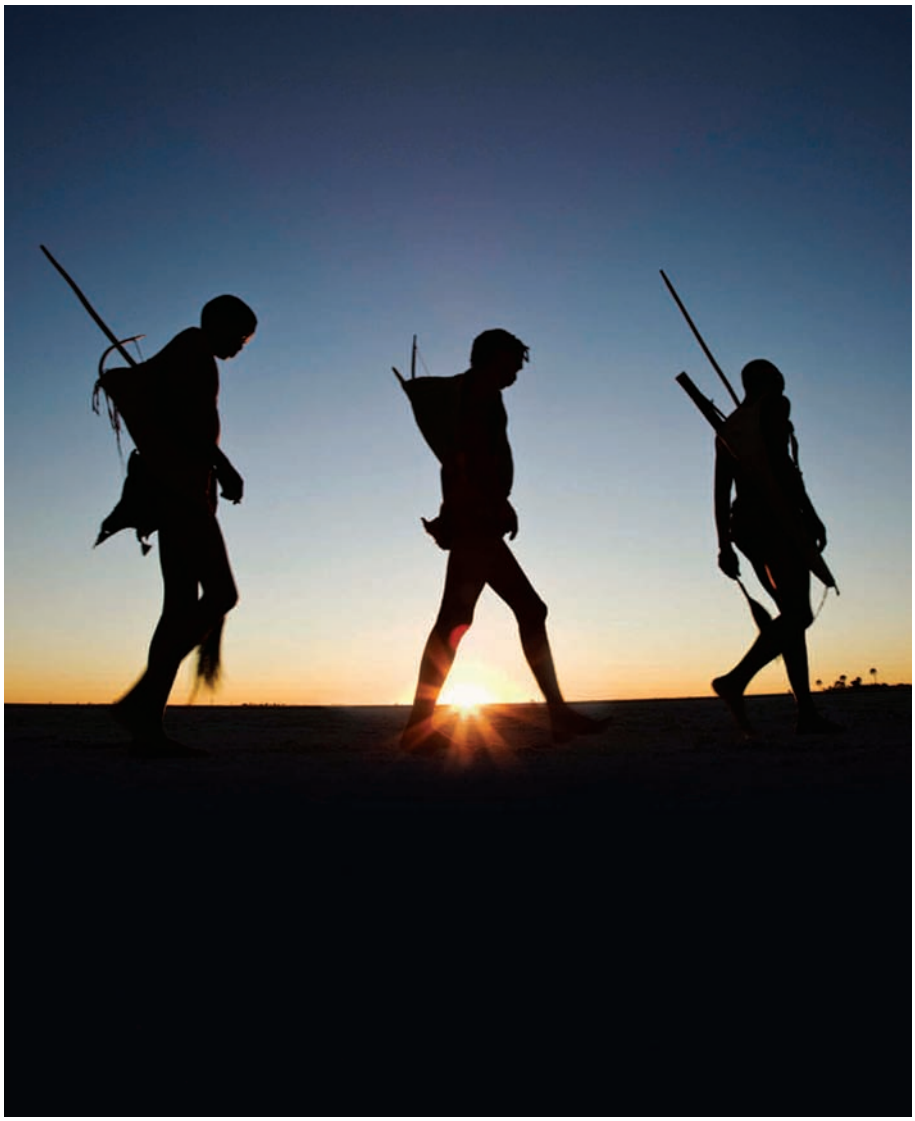
Homo sapiens

The great story of human diversity

Every village is a microcosm that tends to reproduce the macrocosm of the whole of mankind, only in rather different proportions.

Luigi Luca Cavalli Sforza, 2011

Martin Harvey Getty Images



how to use this file

- work modules

  mal d'Afrique
  solitude is a recent invention
  genes, peoples, languages
  traces of lost worlds
  Italy, unity in diversity
  all related, all different

- suggestions for further reading from the Art Bookshelf
- filmography
- websites

how to use the file
This file is designed for anyone interested in finding things out and in experimenting with things. It offers suggestions for discussion topics and activities.
The work modules explore key themes with images, information, quotes and tips for encouraging creative activity.
The file is a useful tool for further developing the issues addressed in the exhibition, either at school or and at home, in an attempt to foster ongoing dialogue with schools and families lasting well beyond the visit to the exhibition itself.

suggestions for use

a resource for teachers, parents and professionals

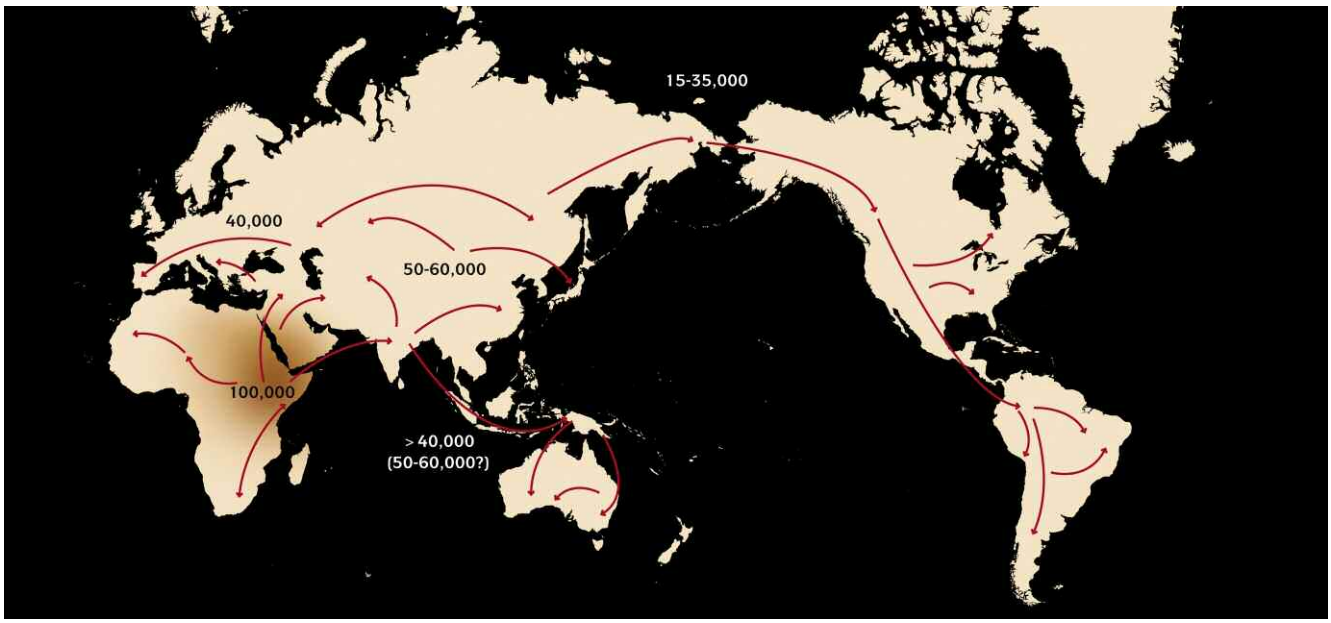
In the exhibition entitled *Homo sapiens. The Great Story of Human Diversity*, an international group of scientists hailing from a range of different disciplines, coordinated by Luigi Luca Cavalli Sforza, introduces the most recent discoveries on the evolution of mankind and on the paths our ancestors followed during the spread of the human species. The result is a multimedial, interactive exhibition in six sections telling the stories and adventures of the still largely obscure migrations that produced the mosaic of human diversity which we know today.
This file, like the exhibition, is split into six sections mixing a range of different disciplines in an effort to make it easier to understand the themes addressed in the exhibition itself, which range from archaeology to prehistory and from genetics, to anthropology and to art.
We would love to hear from you, so please don't hesitate to let us have your views and opinions on the file and its suggestions for use.
Please write to us at the following address: **didattica.pde@palaexpo.it**
To express our gratitude, we're giving away free tickets to the exhibition to the first fifty readers who send in their opinions and views.

for further information on our working method, we recommend:
C. Francucci and P. Vassalli (editors), *Educare all'arte. Immagini esperienze percorsi*, Electa Milan 2009
and *Educare all'arte*, Electa Milan 2005

educational aims

- stimulating the emergence of skills already naturally present in every child
- encouraging group work based on interaction with others involving story telling, descriptions and dialogue, asking each other questions, and trading information, impressions, opinions and feelings
- exploring the links and synergies existing among the various disciplines in the study of prehistory
- approaching history through comparison with daily life in order to stimulate curiosity and to explore its relevance to the present day
- setting events from prehistory to today in so-called "deep time"
- boosting children's ability to observe ancient artefacts and works of art in order to understand the context in which they were produced
- gaining hands-on experience with the graphic and painting techniques of prehistoric arts
- studying language as one of our species' typical features that is constantly changing and evolving
- understanding that even though mankind has such a varied history, it is nevertheless a unique species which originated in Africa
- understanding the scientific insubstantiality of the concept of "race"
- perceiving the museum as a resource for intercultural education
- offering learning methods based on the kind of theoretical criteria and practical solutions that can be achieved in a workshop environment

Map showing the spread of mankind throughout the globe



primates order of mammals that includes lemurs, apes and hominids.

species in biology, a group of individuals in whom cross-breeding leads to the birth of a fertile descendance.

geologist a scientist who studies the origin, history, shape and formation of the earth and of the rocks it is made of.

The history of mankind begins on foot.

André Leroi-Gourhan, 1964

Mal d'Afrique

Large, bizarre-looking **primates** emerge from the African plains and colonize the Old World. Timewise, we're just after the beginning of a genus called *Homo*, almost 2 millon years ago. What is their distinctive feature? The expansion of their brain? The use of stone tools? Of course, but the thing that really marks this new **species** out seems to be the ability to move at ease on two feet. Their pelvis is compact, curved and attached to powerful muscles. Their gait is no longer hesitant or swinging, and their upper limbs no longer hang down by their sides almost touching the ground. The first *Homo* are slim and agile, perfectly suited to their increasingly parched habitat in eastern Africa. Split into different species, they're fantastic walkers and they may already have lost their fur, or body hair. In many ways they're children of the formation of the Great Rift Valley, a tectonic valley in eastern Africa where numerous fossile remains dating back to over 16 million years ago have been discovered. They move around looking for food, and they spread out to explore unknown areas; in short, they're always on the move. There's still something of them in each one of us today. When we began to turn into human beings, we also started to wander around in open spaces, to cross prairies, valleys and isthmuses to see if there was "something new just over the next hill".

Reconstruction of the two *Australopithecus afarensis* individuals who left their footprints at the Laetoli site in Tanzania © AMNH

activity

on two feet

Walking "on two feet" brought with it both advantages and disadvantages compared, for example, to the four-footed walk of our closest relation, the chimpanzee. While it's true that, thanks to the way we move, our hands are now free to carry food and other things, standing upright has entailed a costly reorganisation of our whole anatomy. It has made us more unstable, our vital organs tend to be more exposed, it has narrowed the birth channel in females and it takes our "puppies" longer to get the hang of it. Even today our body has not completely adapted to the upright posture, as anyone suffering from a slipped disc, a bad back or aching joints can tell you! Wait until about midday on a sunny day and ask your students to walk on all fours, observing the shadow they cast compared to when they're walking on two feet. What was one of the most important benefits of bipedalism for a species moving around in the blazing heat of the African plains?

activity

let time pursue it course!

The first representatives of the *Homo* genus appeared on earth about 2.5 million years ago. That sounds like an awfully long time ago to us, but can we imagine exactly how long ago it was? It's almost impossible even for an adult to visualise such long periods of time, or what scientists call "deep time", in an abstract manner. So here's a "practical" way of visualising it. Let's compare the earth's age, about 4.5 billion years, to the length of a roll of toilet paper, which is about 24 metres on average. Where does *Homo sapiens* stand compared to the overall age of the earth? To find the answer, you have to use this ratio: 2,400 cm : 2,500 millennia = x cm : 2.5 millennia, x = 2.4 cm. Considering that one sheet of toilet paper measures 12 cm on average, the *Homo sapiens* genus appears only at the end of our roll, thus at the tail end of the earth's age span!

activity

skilled primitives

The first stone tools discovered by scientists date back to the appearance of the *Homo* genus. Making tools using stone is a typical feature of human beings. Are these objects really so "primitive"? What skills did a prehistoric "artisan" have to possess? Try getting your students to produce an object of your choosing, however basic, by striking one stone against another. Is it easy to do? Our ancestors weren't just capable of visualising a shape without actually seeing it, or of being good stone-chippers, they were expert **geologists** as well. Try chipping different kinds of stones. Some will prove to be too hard while others will prove too fragile. The stones our ancestors used to make prehistoric tools, stones like flint and obsidian, were just hard enough and they produced extremely sharp edges.

Inuit ivory narrative tablet made from the lengthwise section of a walrus tusk. The engravings on the front and back show hunting and fishing scenes, and scenes of village life.

Neanderthal man species of the *Homo* genus, the closest relation to *Homo sapiens*, recorded in Europe and in western Asia between 250,000 and 30,000 years ago. The name comes from the site in Germany where some of this species' first remains were discovered.

phylogenetics the evolutionary history of a species or a group, and of its relations.

A single human species now inhabits this planet, but most of the history of hominids has been characterised by multiplicity, not by unity. Mankind's present status as a single species widely spread throughout the planet is singularly unusual.

Stephen J. Gould, 1998

Solitude is a recent invention

When our species, *Homo sapiens*, first saw the light of day in Africa about 200,000 years ago (according to genetic and archaeological data), one of its first activities was to... move! But the Old World was already crowded with various species of the *Homo* genus that had come from Africa in two previous waves. So our *sapiens* ancestors, emerging from Africa in successive waves and spreading from region to region, met up with their older cousins, co-existing alongside them in the same areas for a long time until, for reasons that aren't yet clear – possibly in the wake of competition for resources – they remained the sole representatives on earth of the entire *Homo* genus, with their flat faces, their long legs, their very pronounced frontal lobes and their lengthy childhood. It was a belated and maybe even a chance development.
Up until 40 millennia before, which is the bat of an eyelid in geological time, fully five species of the *Homo* genus all inhabited the Old World at the same time.

An artist's impression of what Neanderthal man may have looked like; recent discoveries suggest that he may have used bird feathers to adorn his body. Illustration by Mauro Cutrona

activity

shall we speak Neanderthal?

We can tell that **Neanderthal man** must have spoken some kind of elementary, articulated language from the shape of his throat. His neck is shorter than ours, probably due to adaptation to colder climes, so his larynx, his pharynx and his vocal cords are shorter too. By studying their shape, scientists have suggested that our cousins couldn't pronounce either the vowel sounds "i", "a" and "u" or the consonants "g" and "k". Try reading a sentence omitting those sounds. The language you'll hear is going to sound a bit like Neanderthalian!

activity

the family tree of hominids

The story of human evolution is more complex than one might expect, not only because fossil remains are often few and fragmentary, but also because mankind comes in a remarkable variety of types which have moved around and probably cross-bred too, to the point where virtually our entire genus has become extinct. Only one branch of this intricate family tree has managed to survive the tribulations of time, and that's our own! Try your hand at palaeontology by reconstructing the *Homo* genus's family tree. Cut out the skulls and glue them on a panel, attempting to reconstruct the **phylogenetics** using the data provided in the table. It is a very complex operation, because differing "trees" will emerge according to the criterion you adopt in choosing the order in which you select the data. Scientists are trying to build a tree capable of synthesizing all of the rest as clearly as possible.

name	skull	probable appearance and extinction	height	cranial capacity	origin
Homo erectus		1.8 million 50,000 years	180 cm	up to 1000 cm^3	Africa, Europe and Asia
Homo floresiensis		95.000 > 17.000	100 cm	up to 400 cm^3	Indonesia
Homo sapiens		200.000 > ?	170 cm	up to 1450 cm^3	Africa, then the entire planet
Homo habilis		2.3 > 1.4 million years	130 cm	up to 650 cm^3	Africa
Homo heidelbergensis		700.000 200.000 years	180 cm	up to 1400 cm^3	Europe, Asia and Africa
Homo ergaster		1.9 > 1.4 million years	180 cm	up to 1000 cm^3	Africa
Homo neanderthalensis		250.000 30.000 years	160 cm	up to 1500 cm^3	Europe and the Middle East

Cro-Magnon *Homo sapiens* with modern anatomical features, first recorded in Europe 40 thousand years ago. The name comes from the French site of the same name where their first remains were discovered.

genetics the scientific study of the hereditary transmission of biological features.

archaeology the scientific study of past civilisations through the collection and analysis of material traces which those civilisations have left behind them.

linguistics the scientific study of human language and its evolution in time and space.

megafauna this term indicates large-scale animals and its often associated with fauna that became extinct in prehistory, such as mammoths and dinosaurs.

Our much-glorified scale of progress is, in reality, simply the recording of a declining diversity in a largely unsuccessful genealogical line which ended up, at some point, bumping into a bizarre invention of evolution called a conscience.

Stephen J. Gould, 1993

Genes, peoples and languages

Scientists are starting to put together the jigsaw puzzle showing how *Homo sapiens* populated the earth, and as they do so, we can begin to make out maps showing the genetic, linguistic and anthropological diversity of mankind. European sites containing **Cro-magnon** *sapiens* remains, and maybe even the oldest discoveries in South Africa, are starting to reveal the first signs of a major behavioural and cognitive change which scholars have dubbed the "Palaeolithic Revolution", marking the cognitive and linguistic "rebith" of the human species: talking man. For the first time in nature we begin to see the ability to think and creative skills that no other living creatures, including other human species from the past, appear to possess. Having lost our primacy as exceptional and unique beings, the outline of our specificity began to emerge. In the meantime, the planet was witnessing two epic adventures involving the exploration and colonisation of "new worlds": the Australian continent and the Americas. Thanks to the convergence of data from different disciplines - such as the **genetics** of populations, **archaeology** and **linguistics** - we are able today to reconstruct a family tree showing the diversification of peoples on the planet and the ramification that led mankind to spread throughout the world. The planetary history of human diversity is written in genes, in peoples and in languages.

A mitochondrion, which is a cellular organ containing genetic material used to date the phylogenetic relations in populations and species
© Science Picture Co/Science Faction/Corbis

Cave painting depicting a horse from the Lascaux Caves in France, dating back to the Late Stone Age

Historical cast of the skull of a Smilodon populator, the largest species of sabre-toothed tiger ever to have walked the earth. Florence University Natural History Museum, Geology and Palaeontology Section

activity

pages in stone

We became anatomically and mentally modern about 40,000 years ago, with the burgeoning of an intelligence now capable of symbolism and of abstraction, which produced: splendid cave paintings and rupestrian art populated with magnificent and realistic hunting scenes or with stylized and symbolic figures; works of art carved in bone; sumptuous and sophisticated burial rites; ornaments for the body, jewels and embellishments; and the first musical instruments. It's as though we'd learned to invent possible worlds rather than just passively accepting harsh reality.
The modern human mind was born, and it was ready to turn its hand to art and music for the first time. Try getting inside the mind of a prehistoric artist. Immagine that your classroom is a dark cave lit only by flickering torches. Find a few stones to use as your "stone pages". Use charcoal to draw the outline of a few figures on them (our ancestors used burnt wood), and then mix some natural pigments (ochre, white clay or bog iron) with water to colour them in. And if you're looking for a paintbrush, take some small sticks to simulate the tools they used thousands of years ago. Allow the colour to dry and then fix the pigments using spray glue.

activity

linguistic deviation and derivation

The evolution of language has many features in common with the evolution of animal and plant species. Starting with a "mother tongue", languages gradually start to vary in small details as time goes by, and they can end up being very different from the original. If two peoples speaking the same language are isolated from each other, the language they speak will start to change, until there comes a time when a member of one group will no longer be able to communicate with a member of the other. Let's try simulating this phenomenon. Split your class into two groups, then whisper this sentence into the ear of one member in either group: "Migrations and changes can cause the various types of *Homo sapiens* to differentiate from one another". Now get both groups to play "cordless telephone". Every minor change or mistake in relaying the sentence simulates a linguistic change, but because the two groups are isolated, different kinds of changes are going to build up. After the sentence has gone around a few times, get each group to write the last sentence down on a sheet of paper exactly the way it was whispered. Now split each group into two sub-groups and start the ball rolling again. When the game's over, compare the four "daughter" sentences to their original "mother". What's happened? Which sentence bears the greatest resemblance to the original? Linguists manage to reconstruct the world's linguistic family trees by comparing similarities and differences between the world's languages using the same method, only working backwards.

Reconstruction of a Homotherium serum, a large American cat that lived between 2 millon and 100,000 years ago © Davide Buonadonna

topic for discussion

extinction yesterday, today and tomorrow

Wherever *Homo sapiens* has ended up settling down, as he has travelled around the world for the whole of his history, he has modified the environment and the living species with which he has come into contact. We all know about the extinction of the prehistoric **megafauna** in America and Australia. These animals were large, like the diprotodontia, or extremely dangerous, like the sabre-toothed tiger, but they failed to survive their encounter with the bipedal primate on account of intensive hunting and of the destruction of their habitat. But the same has happened even in historical times - one has but to think of the Moa or the Dodo – and unfortunately it's a process that hasn't yet come to an end. Try researching the number of prehistoric species that became extinct due to mankind, and the number of species that have met with the same fate over the past ten years.

Flores man nicknamed *hobbit man* on account of his tiny stature, this species of man became extinct in mysterious circumstances only 12,000 years ago, even though he was anatomically archaic. He was the last species of the *Homo* genus to become extinct. The name comes from the Indonesian island of the same name, where his remains were discovered.

adapting biologically and culturally

Biologists call "adaptation" any form of inheritable feature in an organism that can increase its ability to survive and to reproduce in its environment. This is one of the key concepts on which Darwin's theory of evolution is based: natural selection down the ages has permitted the survival of those peoples whose individual members possessed the characteristics most functional to a given environment. A lion's claws, a fish's pectoral fins or the white coat of an arctic fox are all classic examples of adaptation. But our own species is special: for tens of thousands of years now, our survival hasn't been ensured just by given physical characteristics but also, indeed above all, by cultural innovation. For instance, even though we aren't covered in thick fur, we can survive in extremely cold climates thanks to technological inventions such as fire and clothing. The human species adapts to its environment principally by "cultural" and technological means. The peoples that have survived down the ages are those who have designed and produced innovations capable of allowing them to survive in new environments to which they weren't previously accustomed.

Moving from place to place is a prerogative of the human being, it is part and parcel of his "capital", it is an additional skill in improving his standard of living. It is a feature of his nature which allowed him to survive as hunter and gatherer, which allowed the species to spread throughout the planet, and which fostered the spread of farming, settlement in empty spaces, global integration and the first globalisation process in the 19th century.

Massimo Livi Bacci, 2010

Traces of lost worlds

If Neanderthal man and **Flores man** had survived for a few millennia more, they would have seen ploughed fields and the first cities of Çatal Hüyük, Tell es-Sultan and Jericho. The domestication of plants and animals, which began in various parts of the globe between 11,000 and 7,000 years ago after the last great ice age, brought with it a series of new practices imposed on the earth's system, which caused ecosystems to produce more than they would have naturally produced if left to their own devices. With the first agricultural and urban civilisations, mankind began to grow at an unprecedented rate, triggering a new wave of migrations, settlements, cross-breeding and clashes between old and new routes of human expansion. Population charts and linguistic familes starting remixing, and the whole great carovan of human diversity got moving again. *Homo sapiens* reached virtually every accessible corner of dry land on the planet, with irreversible consequences. Man began to have a serious impact on biological diversity and the rate of extinction due to human causes started to pick up speed. In the weaving pattern of migrations, cultural diversity was threatened too: farmers and nomads met and clashed. All of these stories spell out a clear message for us today: migration continues to be the principal driving force behind change in the mosaic of human diversity.

Cemi, an idol in processed cotton fibre woven and mixed with bone, was worshipped by the pre-Columbian Taínos inhabitants of the Caribbean. This is the only example of an Antillean "idol" still in existence. Turin University Museum of Anthropology and Ethnography

Terracotta tablet from ancient Babylon, 1700 B. C., bearing what scholars consider to be a formula, in cuneiform (or wedge-shaped) characters, for calculating the diagonal of a square: Pythagoras' theorem a long time before Pythagoras was even born. Yale Babylonian Collection

activity

of marks and writing

Associated with the birth of trade and with the first, timid appearance of the economy, writing first saw the light of day as a tool designed to make those activities simpler through, for instance, the use of symbols to indicate the number of cattle or the amount of a given commodity, and to impress data on something more solid and lasting than the human memory. The powerful tool of writing soon colonised every aspect of human life, from religion to literature and to mathematics. Split the class into two groups. A member of each group should go up to the blackboard and try to get his or her team to guess the same sentence, using only drawing and without uttering a word. The winner isn't the team that guesses the sentence first but the one that uses the fewest "marks" on the blackboard to do so, because writing was also invented to speed up the translation of thought, to encourage the use of abstract concepts and to stimulate the imagination.

topic for discussion

pets in the home

Towards the end of the last ice age, mankind began to produce his own food, freeing himself increasingly from the need to exploit what nature offered him spontaneously. While many plant species have been domesticated in various parts of the world, the same cannot be said of animals. Try finding out how many animal species man has tamed. Can you name them all? How come there are so few? What features do you think a "tameable" species has to have? And why have those species accepted such a compromise? What benefits has it brought them? The story of the oldest domesticated species, the dog, is emblematic in this sense. Try tracing it to help you understand how come other species, too, have met with the same fate.

Various breeds of domestic dogs
© Chris Collins/CORBIS

topic for discussion

extremely adaptable

Even today it's no simple matter to organise an excursion to such extreme environments as the arctic, yet thousands of years ago our species had already colonised these areas. First of all, try finding out what kind of equipment an explorer needs if he wants to travel to the North Pole today. Now try replacing every item in that equipment with its prehistoric equivalent. Can it have been simple to colonise that kind of environment? What is it that allowed these prehistoric explorers to be successful? What adapations did they experience initially? Were they **biological adaptations**, like the colour of their skin or their hair, or were they **cultural adaptations**?

The learned say that one of the inhabitants of that region, Italus, became king of Aenotria; that the people, changing their names, were called Italians instead of Aenotrians and that the whole of the peninsula of Europe which stands between the Scylletic and Lametic gulfs, which lie half a day's march the one from the other, took its name from him.

Aristotle

Italy, unity in diversity

The planetwide history of human diversity is rich in emblematic cases. Italy owes its biological and cultural diversity to its geographical position, to its shape and to the endless stratification of peoples entering and leaving the peninsula. This has given us a unity in diversity and a diversity in unity that is unparalleled anywhere else in the world.
Ever since the history of the first "Italians", who belonged to other human species which shared the peninsula with us before *sapiens* was left as the sole living representative of the *Homo* genus, our country has always been a land of encounter and of transit.
Even after the invention of farming, Italy enjoyed a strategic position during the eras in which the Mediterranean area started to populate. The expansion and subsequent migration of peoples have all left traces in Italy's complex genetic jigsaw puzzle.
From these threads of diversity there gradually began to emerge the warp and weft of our cultural unity, as shown by the birth of the Italian language which occurred a long time before Italy came into being as a single political unit. In modern history, the emigrants were the Italians themselves, both in the age of global exploration in which we played a leading role, and between 1840 and 1914 when 11 million people left the country in search of work. Today, Italy and Europe in general have once again begun to attract more and more migrants from distant countries and the future appears to be increasingly bound to spreading diversity.

The "Young Prince" of Arene Candide (a grotto in the vicinity of Finale Ligure, Savona) is the burial of a young man who lived 24,000 years ago. His funeral accoutrements, which are extremely rich and perfectly preserved, suggest that the boy was an important member of his community.
© Gustavo Tomsich/CORBIS

activity

searching for prehistory

Our country is known throughout the world for its history, but hardly at all for its prehistory. Italy starts to put in an appearance in history books when the Romans hit the scene (apart from a brief mention of Greek colonies in the south, in Magna Graecia), but *Homo sapiens* had already been living in the peninsula, and leaving "traces" of his presence here, for hundreds of thousands of years. Try finding out about the prehistoric treasures preserved in Italy, and try working out why our country has been lived in for so long.

activity

multicultural is best

After a long period of emigration, our country is now experiencing a phase of immigration. We often tend to see this as a problem leading to widespread impoverishment. In actual fact, history tells us that when peoples come together, however stormy their encounter may be at first, it has always ended up making them richer rather than poorer. Multiculturalism has often proved to be a benefit for the civilisations that have experienced it. Try finding people in your school or in your neighbourhood who speak a different language from you. Ask them to translate Article 1 in the Universal Declaration of Human Rights: " All human beings are born free and equal in dignity and rights.They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood". How many different languages have you managed to translate the article into?

topic for discussion

changing language

The Italian language came into being before Italy did as a country. While we only achieved national unity in 1861, our language took its first steps in the last few centuries of the Roman Empire. So it's an ancient language, and it was one of the few common denominators shared by a people politically and culturally divided for centuries. Our language, with its long history, hasn't stopped evolving even today. How is it changing today? What are the newest words to have been added to our vocabulary? English words and neologisms predominate. Do you know why?
And do you kids speak a "language" your parents can't understand? Or when you send a text message, can your grandparents understand what you're talking about?

Ceremonial skull coloured with ochre and decorated with shells, a cult object from the Andaman Islands. Florence University Natural History Museum, Anthropology Section

primary emotions according to cognitivist and evolutionary psychology, the primary emotions are fear, joy, anger and surprise. Unlike secondary emotions - shame, embarrassment and guilt feelings - the primary emotions are expressed through facial mimickry, gestures and tone of voice; they're universal, in the sense that they're independent of a person's culture of origin and they're shared by the human species and the primates.

Laetoli, mankind's first stroll
At Laetoli, in Tanzania, on a layer of fresh ash that was subsequently petrified by the Sadiman volcano, numerous footprints were found to have been left by two adult australopithecus hominids, a male and a female, together with the prints of a baby who was probably trying to leap from one of his dad's footprints to the next. Dating back over 3.5 million years, they're the oldest example of bipedal primates' footprints in history.

We invented races and we took them seriously for centuries, but we now know enough about them to be able to dispense with them.

Guido Barbujani, 2006

All related, all different

There has never been a beginning to history; there have just been histories before other histories. Human diversity isn't caused by predetermined biological and cognitive characteristics, it's the result of a multiplicity of contingent stories that are still unfolding. We shouldn't call ourselves "human beings" so much as "human becomings"! If *Homo sapiens* originated so recently and in one place, Africa, and if our young species then became so mobile, it means that there simply hasn't been enough time for the human population to split into genetically distinguishable "races". Human genetic variability is very limited and it's distributed in an ongoing manner. The dual message in all of this is that the human species possesses strong biological unity and, at the same time, that unity goes hand in hand with extraordinary cultural diversity. Following the era of the great migrations, we're living today in an era of biological and cultural promiscuity on the one hand, and of conflict and standardisation on the other. We don't know how this species of ours is going to evolve because the future depends on us, but what we do know is that "civilisations" are not isolated monoliths; rather, they resemble organisms undergoing constant transformation, rich in internal differences and interdependent both in time and in space. The roots of these malleable systems of cultures and peoples are all intertwined.
The theme of unity in diversity can be read on several levels, from **primary emotions** to languages and from physical features to cultures. We've come a long way, from those first hesitant steps in the volcanic ash of **Laetoli** to man's first steps on the moon!

In ordine da sinistra a destra:
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topic for discussion

what do you mean "races"?

Within a given species there can be "geographical varieties", "races" or "sub-species", in other words populations which are genetically differentiated and which certain physical features can allow us to distinguish from others, yet whose members remain mutually fertile. Does that apply to the human species too? Challenge your students to define the physical characteristics of certain "races", such as the Hispanics, the Latinos, the Indians from India, the Caribbean peoples, or the inhabitants of Brasil or China. When they start comparing pictures, they'll discover that it's impossible. For instance, the so-called Hispanics, whom we often hear of in American crime movies, would temporarily include a European Spaniard, a Mexican with pre-Columbian native American ancestors, and a black Cuban. The individual members of our species haven't been geographically isolated for long enough to create distinct varieties. And in any case, given that we have always been and still are a promiscuous species which is constantly on the move, human varieties are actually being watered down by one another on a non-stop basis.

topic for discussion

the world in a plate

The term "modernity" is often associated today with the expression "globalisation". In actual fact – particularly if, by "globalisation", we mean cultural exchange on the global level – it's interesting to discover that the process has always gone on. It even applies to certain spheres you'd never think of, such as regional cuisine. Ask the class what their favourite food is, particularly if it's a regional dish. Look up the ingredients together and try to discover where they come from. You can repeat the exercise with a whole range of typical foods: hamburgers from the US, fish and chips from England or even Swiss chocolate. Pizza, for instance, is made of wheat which was domesticated in the Middle East, tomatoes which were discovered in America, mozzarella from the milk of cows originally from the steppes of Asia, and basil from the tropical parts of Asia. So is globalization really a uniquely modern process? And what is that makes a dish truly regional?

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Educational Services
Art Workshop

director
Paola Vassalli

project manager
Stefano Papi,
Associazione Didattica Museale, Milan
with Chiara Bandi
and Francesca Romana Mastroianni

suggestions for further reading
Art Bookshelf

English translation
Stephen Tobin

graphic design
rocchi pavese design

information

SIMILAR YET DIFFERENT
visit and workshop

schools • kindergarten and primary schools
Tuesday to Friday 11.30 am to 1.30 pm
admission € 4.00
(kindergarten: admission free)
activities € 80.00 per class group
two classes can be accommodated at once (max 25 children per class)
reservations compulsory
(there is no charge for this service)

families • children 7 to 11
Sunday 11 am to 1 pm
activity + admission to the exhibition € 12.00
booking recommended
(there is a € 1.50 charge for this service)

family special
activity + admission to the exhibition € 10.00 per child
admission to the exhibition € 10.00 per adult (max 2)
children aged 7 to 11 who attend two workshops associated with the major exhibitions at the Palazzo delle Esposizioni and the Scuderie del Quirinale in any one month, may purchase a special combined workshop ticket for € 18.00

Palazzo delle Esposizioni
via Nazionale 194, 00184 Rome
www.palazzoesposizioni.it
information and reservations
schools 06 39967 200
others 06 39967 500
Monday to Friday 9 am to 6 pm
Saturday 9 am to 2 pm

suggestions for further reading from the Art Bookshelf

for adults

Luigi Luca Cavalli Sforza, Telmo Pievani, *Homo sapiens. La grande storia della diversità umana*, Codice Edizioni 2011 (exhibition catalogue)
Guido Barbujani, *L'invenzione delle razze. Capire la biodiversità umana*, Bompiani 2006
Tahar Ben Jelloun, *Racism Explained to My Daughter*, The New Press 1999
Luigi Luca Cavalli Sforza, Francesco Cavalli Sforza, *Chi siamo. La storia della diversità umana*, Mondadori 1994
Jared Diamond, *Guns, Germs and Steel: The Fates of Human Societies,* W.W. Norton & Co. 1997
Giorgio Manzi, *Homo sapiens*, Il Mulino 2006
Telmo Pievani, *La vita inaspettata*, Cortina 2011

for children

AA.VV., *Sapiens & Co.*, Larus 2007
Marco Aime, *Una bella differenza*, Einaudi 2009
Henny Boccianti, *Disegni e di scritture*, Lapis 2007
Claire Didier, *Le livre des têtes*, Nathan 2009
Mara Dompè, Alessandro Blegino, *Little Darwin*, Codice Edizioni 2010
Andrea Dué, *The First People: From the Earliest Primates to Homo Sapiens,* Macmillan 1996
Jacqueline Kelly, *The Evolution of Calpurnia Tate,* Henry Holt and Co. 2009
Neal Layton, *The Story of Everything: From the Big Bang until Now,* Barron's Educational, 2006
Jonathan Lindström, *Tutto dal principio*, Editoriale Scienza 2009
Alberto Moravia, *Storie della preistoria*, Rizzoli 2009
Telmo Pievani, *La teoria dell'evoluzione,* Il Mulino, 2010
Telmo Pievani, Federico Taddia, *Perché siamo parenti delle galline? E tante altre domande sull'evoluzione*, Editoriale Scienza, 2010
Peter Sís, *The Tree of Life: Charles Darwin*, Farrar Straus Giroux 2003
Robert Winston, *Evolution Revolution, From Darwin to DNA*, Dorling Kindersley 2009

filmography

Cave of Forgotten Dreams (Werner Herzog, 2010, 3D documentary)
The Clan of the Cave Bear (Michael Chapman, 1986, sci-fi)
Caveman (Carl Gottlieb, 1981, comedy)
Jurassic Park (Steven Spielberg, 1997, adventure)
Quest for Fire (Jean-Jacques Annaud, 1981, adventure)
Ice Age (Chris Wedge, Carlos Saldanha, 2002, cartoon)
Ice Age 2 - The Meltdown (Carlos Saldanha, 2006, cartoon)
Ice Age 3 - Dawn of the Dinosaurs (Carlos Saldanha, 2009, cartoon)
One Million Years B.C. (Don Chaffey, 1966, adventure)
Night at the Museum (Shawn Levy, 2006, adventure)

websites

www.homosapiens.net
www.antiqui.it/doc/preistoria/sommpre.htm
www.paleontologiaumana.it
www.pikaia.eu
www.becominghuman.org
www.amnh.org
www.humanorigins.si.edu
www.nhm.ac.uk
http://paleosite.free.fr
www.culture.gouv.fr/culture/arcnat/lascaux/fr