EDUCATION AND SCIENCE

"Education is not preparation for life; education is life itself."

John Dewey (1859-1952, American philosopher, psychologist and educational reformer)

"The science of today is the technology of tomorrow."

Edward Teller (1908-2003, Hungarian-American theoretical physicist)

Education, training and science help individuals and societies to advance. At the same time, they are necessary prerequisites to generate growth and economic success.

Education and training of individuals as well as scientific progress and discoveries are essential for an economy to prosper. They also ensure that countries have a comparative advantage in the context of global competition.

Education and science are influenced by a variety of factors:

- Education policy
- Public and private expenditure or investment
- Funding and support
- Regulation
- Labor market conditions or restrictions
- R&D policy

This chapter tries to assess the Austrian education system, introducing a variety of rankings and indicators. Austria spends a substantial amount of money on education, training and sciences, as they shape the success of the economy. It nevertheless appears that Austria has been losing ground in some areas and that an adequate policy reaction is required.

Education and Sciences

Relevant rankings and indicators - Austria's performance in the last few years

(as of May 2012)

Knowledge Economy Index
World Bank, May 2010, 146 countries:

Austria: 15th rank
8th among the EU-27

1995	2000	2008	2010
12	10	12	15

Proportion of population with tertiary educational attainment in EU (25-64 year olds)
Eurostat, June 2011, EU-27 countries:

Austria: 21st rank
21st among the EU-27

2005	2007	2009	2011
21	21	21	21

PISA Results
OECD, December 2010, 65 countries/regions (2000, 2003, 2006: 30-50 countries/regions):

Austria's rank
22nd, 10th and 15th among the EU-27

2000	2003	2006	2009
Reading			
10	22	22	39
Mathematics			
11	18	18	24
Science			
8	23	18	30

KNOWLEDGE ECONOMY INDEX

Institution	World Bank
Publication	Knowledge Assessment Methodology
First Publication	1995
Frequency	last publication
Source	http://data.worldbank.org/data-catalog/KEI
Aim	Measures the effectiveness of framework conditions and their ability to support the use of knowledge in order to achieve economic progress
Attributes	▪ 146 countries ▪ The index mirrors the ability of a country to accumulate, reproduce and transfer knowledge ▪ The index consists of 109 variables, which are divided into 4 categories: economic incentives and institutional setting, general education and vocational training, innovation and technological applications, Infrastructure and ICT

Austria's strengths

- Austria ranks 9th in the sub-category *regulation, laws and tariffs*
- Substantial and wide-ranging investments in ICT are viewed positively

Austria's weaknesses

- Austria lost ground compared to 2000, when it was ranked 10th
- Austria lost three positions compared to 2008
- Austria's education system requires modernization, especially on the secondary and tertiary levels
- Investments in innovative education systems are insufficient

Knowledge Index

Country	2010	2008
Denmark	1	1
Sweden	2	2
Finland	3	3
Netherlands	4	4
Norway	5	5
UK	7	8
Ireland	8	11
USA	9	9
Switzerland	10	7
Germany	12	14
Austria	**15**	**12**
Belgium	16	16
Japan	20	19
France	22	20
Israel	26	25
Czech Rep-	28	29
Italy	30	27
Poland	37	36

PROPORTION OF 30 TO 34 YEAR OLDS WITH TERTIARY EDUCATIONAL ATTAINMENT

Institution	Eurostat
Publication	Key figures on Europe 2011 (and previous editions)
First Publication	2005
Frequency	annually
Source	http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-EI-11-001/EN/KS-EI-11-001-EN.PDF
Aim	Key figures on Europe offers a large variety of statistical data on EU-27 member states
Attributes	▪ EU-27 countries ▪ Chapter 4 offers a variety of data on education

Austria's strengths

- The Austrian federal government has pledged itself to achieving the Europe 2020 target, which aims at increasing the percentage of 30-34 year olds completing third level education
- There is little gender difference in tertiary educational attainment in Austria

Austria's weaknesses

- Austria is only ranked 21st among the EU-27 with respect to tertiary educational attainment
- Only around 23% of the population group 30-34 have undergone tertiary education
- The number of graduates in tertiary education actually decreased over time

Tertiary educational attainment (men and women)

Country	2011	2009
Ireland	1	5
Denmark	2	4
Finland	4	1
Sweden	6	8
France	7	13
Belgium	8	6
UK	9	9
Netherlands	11	7
Spain	12	11
Poland	14	19
Slovenia	15	18
Germany	17	14
Hungary	20	20
Austria	**21**	**21**
Portugal	23	24
Italy	24	23
Czech Rep.	26	22

TERTIARY GRADUATES IN SCIENCE & TECHNOLOGY

Institution	Eurostat
Publication	Key figures on Europe 2011 (and previous editions)
First Publication	2005
Frequency	annually
Source	http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-EI-11-001/EN/KS-EI-11-001-EN.PDF
Aim	Key figures on Europe offers a large variety of statistical data on EU-27 member states
Attributes	▪ EU-27 countries ▪ Chapter 13 offers a variety of data on science & technology ▪ Graduates in the age group 20-29, per 1,000 inhabitants

Austria's strengths

- Expenditure on R&D (as a percentage share of GDP) is 4th highest among the EU-27 member states
- Austria improved by three ranks in the number of science & technology graduates, as compared to 2009
- Both the share of male and female 20-29 year old tertiary graduates in science & technology increased over time

Austria's weaknesses

- Many EU-27 member states showed remarkable improvements over time
- FIN, PT, F and IE have the highest number of graduates per 1,000 (25-30 males and 15 females per 1,000), compared to Austria (18 males and 6 females per 1,000)
- A big gender gap in relation to tertiary graduates in science & technology persists in Austria
- There are too few incentives for young researchers to continue their education in Austria

Graduates in science & technology (age 20-29, per 1,000)

Country	2011	2009
Finland	1	5
Portugal	2	9
France	3	2
Ireland	4	1
UK	6	4
Slovakia	9	15
Czech Rep.	10	23
Sweden	12	7
Germany	13	20
Austria	**15**	**18**
Belgium	16	12
Slovenia	20	19
Netherlands	22	22
Hungary	24	24

TOTAL RESEARCHERS (FTE) PER 1,000 TOTAL EMPLOYMENT

Institution	OECD
Publication	Main Science and Technology Indicators 2011/2
First Publication	2003
Frequency	twice a year
Source	http://www.oecd.org
Aim	Compares science & technology data of (selected) OECD countries
Attributes	▪ 33 OECD countries ▪ Availability, demand and supply of researchers in the labor market

Austria's strengths

- With almost 9 researchers (FTE, full time equivalent) per 1,000 employment, Austria does well in comparison with other (Western) European OECD member countries
- Around 68% of these researchers are employed in industries, 28% in higher education and 5% at the governmental level
- Austrian authorities recognized the necessity to open the labor market for qualified labor and researchers to counter existing labor shortages

Austria's weaknesses

- Austria could not improve in the ranking, while other European countries caught up with Austria
- Austria still lacks researchers in science & technical industries as well as in R&D
- Framework conditions for hiring scientists and researchers need further improvement

Researchers (FTE) per 1,000 employment

Country	2011/2	2009/2
Iceland	1	2
Finland	2	1
Denmark	3	5
Sweden	6	6
Japan	7	3
Norway	8	7
Austria	12	12
Belgium	14	15
Germany	16	17
Ireland	18	21
Slovakia	22	25
Netherland	24	22
Czech Rep.	25	23
Switzerland	26	24
Hungary	27	26
Italy	29	28

PISA RESULTS 2009 - READING

Institution	Organization for Economic Co-operation and Development (OECD)
Publication	Pisa Results 2009 - Reading
First Publication	2000
Frequency	every three years (every time with a new focus)
Source	http://www.oecd.org/pisa
Aim	Evaluates education systems by testing skills and knowledge of pupils
Attributes	▪ 65 countries/regions (incl. all OECD countries) implemented the assessment in 2009 ▪ 470,000 pupils around the age of 15 were assessed (in Austria around 6,590) ▪ Focus in 2009: Reading ▪ Focus in 2012: Mathematics ▪ Focus in 2015: Sciences

A dispute between teacher unions and the education minister in Austria led to a boycott of the PISA 2009 assessment. The PISA dataset met the technical standards, but the atmosphere in relation to the assessments might have affected results. The comparability of the 2009 data with earlier assessments could therefore not be ensured.

Austria's strengths

- Austrian girls performed better in *reading* than boys. The difference between the two genders was 41 points, which corresponds to the learning progress of a school year

Austria's weaknesses

- Austria (470 points) is below the OECD average of 493 and well behind Shanghai region (556) or Korea (539)
- Austria was only 31st among the 34 OECD countries and 39th in total
- Other scores: FIN: 536 points, NL: 508, CH: 501, USA: 500, SE and DE: 497, HU: 494, IT: 486
- 28% of pupils are "pupils at risk" in reading
- Pupils with migration background perform worse (on average by 67 points)

Reading skills

country/region	2009	2006
Shanghai	1	/
Korea	2	1
Finland	3	2
Netherlands	10	11
Belgium	11	12
Switzerland	14	14
Poland	15	9
USA	17	/
Sweden	19	10
Germany	20	18
France	22	23
UK	25	17
Hungary	26	27
Italy	29	33
Spain	33	35
Austria	39	22
Russia	43	39
Kyrgyzstan	65	56

PISA RESULTS 2009 - MATHEMATICS

Institution	Organization for Economic Co-operation and Development (OECD)
Publication	Pisa Results 2009 - Mathematics
First Publication	2000
Frequency	every three years (every time with a new focus)
Source	http://www.oecd.org/pisa
Aim	Evaluates education systems by testing skills and knowledge of pupils
Attributes	▪ 65 countries/regions (incl. all OECD countries) implemented the assessment in 2009 ▪ 470,000 pupils around the age of 15 were assessed (in Austria around 6,590) ▪ Focus in 2009: Reading ▪ Focus in 2012: Mathematics ▪ Focus in 2015: Sciences

A dispute between teacher unions and the education minister in Austria led to a boycott of the PISA 2009 assessment. The PISA dataset met the technical standards, but the atmosphere in relation to the assessments might have affected results. The comparability of the 2009 data with earlier assessments could therefore not be ensured.

Austria's strengths

- 13% of pupils are among the high-performers, with boys performing better than girls
- The deterioration in *mathematics* was the smallest, as compared to *reading* or *sciences*

Austria's weaknesses

- Austria is well behind the leading countries and regions: Shanghai region: 600, FIN: 541, CH: 534, NL: 526, DE: 513, DK: 503
- With 496 points, Austria was only ranked 18th among the 34 OECD countries and 24th in total
- 23% of pupils are "pupils at risk"
- The socio-economic background of the family or the school have a big influence on student performance (up to 100 points)

Mathematics skills

country/region	2009	2006
Shanghai	1	/
Korea	4	4
Finland	6	2
Switzerland	8	6
Netherlands	11	5
Belgium	14	12
Germany	16	20
Denmark	19	15
Slovenia	20	19
Norway	21	29
France	22	23
Slovakia	23	26
Austria	**24**	**18**
Poland	25	25
Sweden	26	21
Hungary	29	27
Italy	35	38
Kyrgyzstan	65	57

PISA RESULTS 2009 - SCIENCES

Institution	Organization for Economic Co-operation and Development (OECD)
Publication	Pisa Results 2009 - Sciences
First Publication	2000
Frequency	every three years (every time with a new focus)
Source	http://www.oecd.org/pisa
Aim	Evaluates education systems by testing skills and knowledge of pupils
Attributes	▪ 65 countries/regions (incl. all OECD countries) implemented the assessment in 2009 ▪ 470,000 pupils around the age of 15 were assessed (in Austria around 6,590) ▪ Focus in 2009: Reading ▪ Focus in 2012: Mathematics ▪ Focus in 2015: Sciences

A dispute between teacher unions and the education minister in Austria led to a boycott of the PISA 2009 assessment. The PISA dataset met the technical standards, but the atmosphere in relation to the assessments might have affected results. The comparability of the 2009 data with earlier assessments could therefore not be ensured.

Austria's strengths

- There is no gender difference in Austria in the performance in the PISA category *sciences*
- 8% of pupils are high-performers

Austria's weaknesses

- With 494 points, Austria was only 24th among the 34 OECD countries and 30th in total
- Austria's pupils are below the OECD average (501) and well behind leading nations: Shanghai region: 575, FIN: 554, EE: 528, NL: 522, CH: 517, UK: 514, PL: 508, F: 498
- 21% of Austrian pupils are "pupils at risk"
- Around 20% of Austrian pupils have deficiencies in arguing and understanding basic sciences after their graduation

Sciences skills

country/region	2009	2006
Shanghai	1	/
Finland	2	1
Estonia	9	5
Netherlands	11	9
Germany	13	13
Switzerland	15	16
UK	16	14
Slovenia	17	12
Poland	19	23
USA	23	29
Czech Rep.	24	15
France	27	25
Sweden	29	22
Austria	**30**	**18**
Slovakia	34	30
Italy	35	36
Israel	42	39
Kyrgyzstan	65	57

TIMES HIGHER EDUCATION WORLD UNIVERSITY RANKING 2011-12

Institution	The Times
Publication	The Times Higher Education World University Ranking 2011-12
First Publication	2004
Frequency	annually
Source	http://www.timeshighereducation.co.uk/world-university-rankings/
Aim	Assesses and ranks universities according to a variety of criteria
Attributes	▪ 400 universities were assessed in 2011-12 ▪ In 2010-11, 200 universities were assessed and ranked ▪ The methodology includes thirteen performance indicators and five broad overall categories, which are: teaching, research, citations, industry income and international diversity

Austria's strengths

- Students, staff and teaching staff at Austrian universities come from a variety of countries
- The University of Innsbruck almost attains over 90 (out of 100) points in the category *international diversity*

Austria's weaknesses

- Austrian universities are far behind the top universities in the world
- Even though the University of Vienna gained over 50 places compared to the Top-200 ranking in 2010-11, it is still far behind
- Revenues from research and from industry income are far smaller than in other countries
- R&D activities and R&D performance are criticized for being too low

University ranking

University	2011-12	2010-11
California Inst. of Tech.	1	1
Stanford	2	4
Oxford	4	6
Cambridge	6	6
ETH Zurich	15	15
Karolinska Inst.	32	43
Univ. Munich	45	/
LSE	47	86
Leuven	67	119
Utrecht Univ.	68	143
Heidelberg	73	83
Univ. Vienna	**139**	**195**
Warwick Univ.	157	/
Innsbruck	**201-225**	**185**
Graz	**251-275**	**/**
Linz	**251-275**	**/**
TU Vienna	**301-350**	**/**

QS WORLD UNIVERSITY RANKINGS 2011-12

Institution	Quacquarelli Symonds (QS)
Publication	QS Education World University Rankings 2011-12
First Publication	2005
Frequency	annually
Source	http://www.topuniversities.com/university-rankings/world-university-rankings/2011
Aim	Assesses and ranks universities according to a variety of criteria
Attributes	▪ 700 universities were assessed in 2011-12 ▪ Categories include: academic reputation, employer reputation, citations per faculty, international faculty, international students

Austria's strengths

- Austrian universities tend to perform best in the category *international students* (Innsbruck: rank 30, Salzburg: 35, Univ. Vienna: 77, Technical University Vienna: 78)
- Innsbruck obtained rank 77 in the category *international faculty*
- The University of Vienna obtained rank 80 in the category *academic reputation*

Austria's weaknesses

- Overall, Austrian universities are well behind the leading universities
- The University of Vienna (as the highest ranked Austrian university) obtained 53.28 out of 100 possible points
- No Austrian university was among the Top-150 with respect to *employer reputation*
- Besides the University of Vienna, no Austrian university was among the Top-200 in the category *academic reputation*
- No Austrian university was among the Top-200 in the category *citations*

University ranking

University	2011-12	2010-11
Cambridge	1	1
Harvard	2	2
MIT	4	5
Oxford	5	6
UCL	7	4
ETH Zurich	18	18
Heidelberg	53	51
Univ. Munich	62	66
Free Un. Berlin	66	70
Leuven	68	86
Utrecht	80	83
Univ. Vienna	**155**	**143**
TU Vienna	**231**	**240**
Innsbruck	**290**	**278**
Graz	**366**	**349**
Linz	401-450	451-500
Salzburg	501-550	601+
Klagenfurt	601+	551-600

ACADEMIC RANKING OF WORLD UNIVERSITIES 2011

Institution	Jiao Tong University Shanghai
Publication	Academic Ranking of World Universities 2011
First Publication	2003
Frequency	annually
Source	http://www.shanghairanking.com/ARWU2011.html
Aim	Assesses and ranks universities according to a variety of criteria
Attributes	▪ 500 universities were ranked and assessed in 2011 ▪ Categories include: quality of education (alumni), quality of faculty (cited researchers and Nobel Prize winners), research output (papers published and citations), per capita performance of institution

Austria's strengths

- The universities in Innsbruck (among the Top-30 universities) and in Vienna (among the Top-80 universities) have a large proportion of international students
- The ratio of academic staff to students is only good at the medical universities in Austria
- Austrian universities are in the upper quarter with respect to the percentage of graduate students

Austria's weaknesses

- Data on research output and income is not always available in order to compare the performance of Austrian universities
- The performance with respect to publications in natural and technical sciences is somewhat mixed, ranging from rank 140 (Univ. Vienna) to rank 731 (MedUni Graz)
- The performance with respect to highly cited researchers per staff is also mixed and ranges from rank 140 (MedUni Innsbruck) to rank 430+ (TU Vienna and University of Graz)

University ranking

University	2011	2010
Harvard	1	1
Stanford	2	3
MIT	4	4
Cambridge	5	5
Oxford	10	10
ETH Zurich	23	23
TU Munich	47	56
Leiden Univ.	65	70
Moscow State	77	74
Goettingen	86	93
Roma Sapienza	102-150	101-150
Univ. Vienna	151-200	151-200
MedUni Vienna	201-300	201-300
Innsbruck	201-300	201-300
MedUni Innsbr.	301-400	301-400
Graz	301-400	301-400
MedUni Graz	401-500	301-400
TU Vienna	401-500	401-500

THINK TANKS RANKING

Institution	International Relations Program, University of Pennsylvania
Publication	Think Tanks and Civil Societies Program
First Publication	2006
Frequency	annual
Source	http://www.gotothinktank.com
Aim	The ranking identifies the leading public policy think tanks and highlights their notable contributions to governments and civil societies
Attributes	▪ 5,329 Think Tanks from 182 countries were nominated ▪ Categories and areas of research include: Overall Top Think Tank, security & international affairs, international development, environment, health policy, domestic economic policy, international economic policy, social policy, science & technology, transparency & good governance ▪ 30 Think Tanks were ranked per category

Austria's strengths

- The Vienna Institute for International Economic Studies (WIIW) was ranked 17th in the category *international economic policy*
- The International Institute for Applied Systems Analysis (IIASA) was ranked 13th in the category *science & technology*

Austria's weaknesses

- 40 Austrian Think Tanks were nominated, but only two were ranked
- No Austrian Think Tank was among the Top-30 Global Think Tank
- No Austrian Think Tank was among the Top-50 Western Europe Think Tank
- No Austrian Think Tank was ranked in the categories *security & international policy*, *environment*, *health policy* or *social policy*

International economic policy

Think Tank	2011	2010
Peterson (US)	1	2
Brookings (US)	2	1
Bruegel (BE)	3	4
Chatham (UK)	4	3
Kiel Institut	5	6
CEPS (BE)	10	11
WIIW (AT)	**17**	**15**

Science & technology

Think Tank	2011	2010
Max Planck	1	1
RAND (US)	2	/
Bertelsmann	3	2
ITIF (US)	7	14
ZEF Bonn (DE)	10	5
IIASA (AT)	**13**	**10**
Lisbon C. (BE)	27	18

INTERNATIONAL SCIENTIFIC CO-PUBLICATIONS (PER MIO. POPULATION)

Institution	Pro Inno Europe – Inno Metrics, European Commission
Publication	Innovation Union Scoreboard (IUS) 2011
First Publication	2001
Frequency	annually
Source	http://ec.europa.eu/enterprise/policies/innovation/facts-figures-analysis/innovation-scoreboard/index_en.htm
Aim	The Innovation Union Scoreboard helps to monitor the implementation of the Europe 2020 Innovation Union flagship, by providing a comparative assessment of innovation performance of EU countries
Attributes	▪ 25 countries (EU-27 minus UK and Slovenia) ▪ International scientific co-publications are a proxy for the quality and openness of scientific research, as collaboration increases scientific productivity ▪ Only co-publications with non-EU countries are included

Austria's strengths

- In Austria (as well as in Belgium, Finland, Ireland, Luxembourg and the Netherlands) over 1,000 scientific co-publications (per million population) were published in 2011
- This corresponds to an increase of around 8% compared to 2010, even though Austria dropped three places in the ranking

Austria's weaknesses

- Austria is well behind the Scandinavian countries (Denmark or Sweden with more than 1,500 co-publications each)

International scientific co-publications

Country	2011	2010
Denmark	1	3
Sweden	2	2
Finland	3	1
Netherlands	4	4
Luxembourg	5	5
Belgium	6	6
Ireland	7	7
Austria	9	6
UK	10	8
Slovenia	11	10
Germany	12	12
Estonia	13	14
France	14	13
Spain	16	16
Czech Rep.	17	18
Italy	19	19
Slovakia	21	20

WORLD SKILLS 2011

Event	WorldSkills London 2011
Date	5-8 October 2011
Next Event	2-7 July 2013 in Leipzig
Homepage	http://www.worldskills.org
Link in Austria	http://www.skillsaustria.at
Aim	The WorldSkills Championship of professions allows to exchange and compare world-class competency standards in the industrial trades and service sectors
Attributes	▪ Every two years, around 1,000 young skilled people from around the world compete before the public ▪ Participants from 53 countries and regions took part in 2011 ▪ They were drawn from regional and national skill competitions

Skills competitions include

- Transportations and logistics
- Construction and building technology
- Manufacturing and engineering technology
- ICT
- Creative arts and fashion
- Social, personal and hospitality services (incl. beauty therapy, cooking, pastry cook, hair-dressing and restaurant service)

Austria's strengths

- 28 Austrian participants won 3 Gold, 1 Silver, 2 Bronze medals and 12 Medallions of Excellence
- 39.4% of Austrian participants won medals in 2011
- Austria was the best EU-27 country
- In the 27 WorldSkills Events since 1961, 447 Austrian participants won 176 medals(61 Gold, 54 Silver and 61 Bronze) and 149 Medallions of Excellence
- The WorldSkills Results illustrate the high quality of the Austrian dual education system

WorldSkills country ranking

Country	2011	2009
Korea	1	1
China	2	/
Brazil	3	4
Switzerland	4	2
Japan	5	13
Australia	8	6
Austria	**9**	**8**
Ireland	10	3
UK	11	7
Germany	13	11
France	15	12
Denmark	17	30
Sweden	18	14
Finland	20	23
Netherlands	24	20
Belgium	30	33
Portugal	31	22
Hungary	32	34
Estonia	37	26
Spain	38	37

EURO SKILLS 2010

Event	EuroSkills Lisbon 2010
Date	9-12 December 2010
Next Event	4-6 October 2012 in Spa-Francorchamps
Homepage	http://www.euroskills.org
Link in Austria	http://www.skillsaustria.at
Aim	The EuroSkills Championship of professions allows to exchange and compare competency standards in the industrial trades and service sectors
Attributes	▪ Every two years, around 500 young skilled people from all over Europe compete before the public ▪ Participants from 29 countries and regions took part in 2010, representing around 50 vocational skills

Skills competitions include

- Transportations and logistics
- Construction and building technology
- Manufacturing and engineering technology
- ICT
- Creative arts and fashion
- Social, personal and hospitality services (incl. beauty therapy, cooking, pastry cook, hair-dressing and restaurant service)

Austria's strengths

- 30 Austrian participants won 16 individual medals (10 Gold, 5 Silver and 1 Bronze) and 4 team medals (2 Gold and 2 Silver) as well as 9 Medallions of Excellence
- In the first EuroSkills Competition in 2008, 16 Austrian participants won 10 individual medals (6 Gold, 4 Silver) and 5 team medals (2 Gold, 2 Silver and 1 Bronze)
- The EuroSkills Results illustrate the high quality of the Austrian dual education system

EuroSkills country ranking

Country	2010	2008
Portugal	1	12
Austria	2	2
Finland	3	5
Netherlands	4	1
Belgium	5	11
UK	6	4
Germany	7	6
Slovenia	8	24
Hungary	9	10
Estonia	10	15
Spain	11	20
France	13	8
Switzerland	14	16
Sweden	16	2
Poland	19	18
Slovakia	21	24
Italy	22	18
Czech Rep.	26	20