

2025 MHSAA Fall Sports Preseason Guide

Coaches and administrators of all fall sports should review the material below and also consider similar procedures as are detailed specifically for football that may well serve other sports, especially the Football Practice Policies. Football-specific material is found on the Football Page of MHSAA.com.

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RESOURCE LINKS

See the MHSAA.com Health & Safety Pages for valuable resources

NOTES AND RESOURCES

Accident Medical Insurance: Since 1970-71 the MHSAA has arranged for Athletic Accident Medical Insurance Coverage for eligible participants at each member school and all registered officials. The program is excess accident medical insurance (\$25,000 deductible) intended to help pay medical bills to administer to injuries sustained in athletic activities in MHSAA tournament sports. Details of the coverage and claims administration are posted on the Administrators page of MHSAA.com, and also can be found in the current MHSAA Handbook.

Concussion Insurance: The Michigan High School Athletic Association is also providing athletic participants at each MHSAA member junior high/middle school and high school with additional insurance that is intended to pay accident medical expense benefits resulting from a suspected concussion. The injury must be sustained while the athlete is participating in an MHSAA in-season covered activity (practice or competition). Policy limit is \$25,000 for each accident. Covered students, sports and situations follow the accident medical insurance.

This program intends to assure that all eligible student-athletes in MHSAA member schools in grades 6 through 12, male and female, in all levels of all sports under the jurisdiction of the MHSAA, receive prompt and professional attention for head injury events even if the child is uninsured or under-insured. Accident medical deductibles and co-pays left unpaid by other policies are reimbursed under this program to the limits of the policy.

Summer Dead Period, Preseason Down Time: For clarifications check the *MHSAA Handbook*, or visit the Administrators page of MHSAA.com

Coaching Requirements at All Levels for 2025-26

Pollowing is a summary of the coaching requirements for the 2025-26 school year and a review of recent requirements.

- 1. REGULATION II, SECTION 3(B) High schools must attest by each season's established deadline that all head coaches at all levels of each high school team have a valid, current Cardiopulmonary Resuscitation (CPR) certification. The established deadline for coaches (regardless of level) shall be the latest date set for the completion of the MHSAA rules meeting for the sport. A person who is the head coach for more than one sport during the school year must meet the deadline for the first of those sports. It is expected that schools will impose the penalty of Section 8(B) on head coaches who do not meet this requirement.
- 2. REGULATION IV, SECTION 3(B) Junior high/middle schools must attest by each season's established deadline that all head coaches at all levels of each junior high/middle school team have a valid, current Cardiopulmonary Resuscitation (CPR) certification. The established deadline for coaches (regardless of level) shall be the first contest date for the sport. A person who is the head coach for more than one sport during the school year must meet the deadline for the first of those sports. It is expected that schools will impose the penalty of Section 8(B) on head coaches who do not meet this requirement.
- 3. REGULATION II, SECTION 3(C) Each head coach of a varsity team in an MHSAA tournament sport hired for the first time as a high school varsity head coach at any MHSAA member high school after July 31, 2016, shall have completed either Level 1 or Level 2 of the MHSAA Coaches Advancement Program (CAP). If the head coach does not complete CAP Level 1 or 2 prior to the established deadline, that coach shall be prohibited from coaching in that season's MHSAA tournament for the sport involved and shall not be present at the facility where the MHSAA tournament involving that coach's team is being held. See Regulation II, Section 15(H)4. An administrator or faculty member designee of that school shall be present with supervisory capacity over the school's competitors. Failure to receive reminder notifications (email or other) does not change the requirement of this Section. The MHSAA may substitute an alternative coach's education program for late hires, which will fulfill the requirement on a temporary basis.

- 4. REGULATION II, SECTION 3(D) High schools shall attest by each season's established deadline that all high school teams (varsity and subvarsity) have an emergency action plan specific to their practice and contest locations. These plans shall be posted, documented, and rehearsed at least once per season. Schools are expected to impose the penalty of Section 8(B) on high school head coaches (varsity and subvarsity teams) who do not meet this requirement.
- 5. REGULATION II, SECTION 8(B) Each head coach of a varsity team in a sport under MHSAA jurisdiction shall complete (in person or online) the MHSAA rules meetings for that sport for the current school year prior to the deadline if meetings are provided and attendance is required. If the head coach does not complete a rules meeting prior to the deadline, that coach shall be prohibited from coaching in that season's MHSAA tournament for the sport involved and shall not be present at the facility where the MHSAA tournament involving that coach's team is being held. See Regulation II, Section 15(H)4. An administrator or faculty member designee of that school shall be present with supervisory capacity over the school's competitors. Failure to receive reminder notifications (email or other) does not change the requirement of this Section.
- 6. REGULATION II, SECTION 8(C) Schools shall attest that all assistant and subvarsity coaches have completed an MHSAA rule meeting (online or in person) for that sport for the current school year prior to the deadline. Assistant or subvarsity coaches who coach more than one sport during a school year must fulfill the requirement each season unless the sport is the same and the coach had completed the MHSAA sport-specific rules meeting earlier in the school year for that sport (e.g., JV boys and JV girls soccer coach). It is expected that schools will impose the penalty of Section 8(B) on assistant or subvarsity coaches who do not meet this requirement by the deadline.

2025-26 Online Rules Meeting Schedule

FALL SPORTS RULES MEETINGS 2025	Start Date	End Date					
Field Hockey, Football, Soccer, Girls Volleyball	Mon, July 21	Thurs, Sept 11					
Cross Country, Golf, Swimming & Diving, Tennis	Mon, July 28	Thurs, Sept 11					
School Attests: Fall head coaches have valid CPR. High school	ol teams (varsity and s	subvarsity) have EAPs.					
Subvarsity and assistant coaches have met MHSAA rules meet	ing requirements.						
New varsity head coaches must complete CAP Level 1 or 2.		Thurs, Sept 11					
WINTER SPORTS 2025-26	Start Date	End Date					
Basketball, Competitive Cheer, Ice Hockey, Wrestling	Mon, Oct 6	Thurs, Dec 11					
Bowling, Gymnastics, Skiing, Swimming & Diving	Mon, Oct 13	Thurs, Dec 11					
School Attests: Winter head coaches have valid CPR. High so	chool teams (varsity an	d subvarsity) have EAPs.					
Subvarsity and assistant coaches have met MHSAA rules meet	ing requirements.						
New varsity head coaches must complete CAP Level 1 or 2.		Thurs, Dec 11					
SPRING SPORTS 2026	Start Date	End Date					
Baseball, Boys Lacrosse, Soccer, Softball, Boys Volleyball	Mon, Feb 2	Thurs, Apr 16					
Golf, Girls Lacrosse, Tennis, Track & Field	Mon, Feb 9	Thurs, Apr 16					
School Attests: Spring head coaches have valid CPR. High school teams (varsity and subvarsity) have EAPs.							
Subvarsity and assistant coaches have met MHSAA rules meet	` •	a subvarsity j have LAI's.					
New varsity head coaches must complete CAP Level 1 or 2. Thurs, Apr 16							

For all MHSAA Heat and Hydration Resources scan this code



Heat Acclimatization and Conditioning in Hot Weather

exertional Heatstroke and Heat Illness is the leading cause of preventable deaths in high school athletics. Students participating in high-intensity, long-duration or repeated same-day sports practices and training activities during the summer months or other hotweather days are at greatest risk.

The Michigan High School Athletic Association recognizes that there are unique and variable climates in Michigan and that there is no "one-size-fits-all" optimal acclimatization plan. However, we strongly encourage member schools to incorporate all of the fundamentals into any heat acclimatization plan.

Exertional Heatstroke and Heat Exhaustion is Preventable

Heat Acclimatization Safety Priorities:

- Recognize that exertional heatstroke is the leading preventable cause of death among high school athletes
- Know the importance of a formal Pre-Season heat acclimatization plan
 Know the importance of having and implementing a specific hydration
- Know the importance of having and implementing a specific hydration plan, keeping athletes hydrated while encouraging and providing ample opportunities for regular fluid replacement

Fundamentals of a Heat Acclimatization Program

- Physical exertion and training activities should begin slowly and continue progressively. An athlete cannot be "conditioned" in a period of only two to three weeks.
 - A. Begin with shorter, less intense practices and training activities, with longer recovery intervals between bouts of activity.
 - B. Minimize protective gear (helmets only, no shoulder pads) during first several practices, and introduce additional uniform and protective gear progressively over successive days.
 - Emphasize instruction over conditioning during the first several practices.

Rationale: The majority of heat-related deaths happen during the first few days of practice, usually prompted by doing too much, too soon, and in some cases with too much protective gear on too early in the season (wearing helmet, shoulder pads, pants and other protective gear). Players must be allowed the time to adapt safely to the environment, intensity, duration, and uniform/equipment.

Keep each athlete's individual level of conditioning and medical status in mind and adjust activity accordingly. These factors directly affect exertional heat illness risk.

Rationale: Athletes begin each season's practices and training activities at varying levels of physical fitness and varying levels of risk for exertional heat illness. For example, there is an increased risk if the athlete is obese, unfit, has been recently ill, has a previous history of exertional heat illness, or has Sickle Cell Trait.

3. Adjust intensity (lower) and rest breaks (increase frequency/duration), and consider reducing uniform and protective equipment, while being sure to monitor all players more closely as conditions are increasingly warm/humid, especially if there is a change in weather from the previous few days.

Rationale: Coaches must be prepared to immediately adjust for changing weather conditions, while recognizing that tolerance to physical activity decreases and exertional heat illness risk increases, as the heat and/or humidity rise. Accordingly, it is imperative to adjust practices to maintain safety and performance.

 Athletes must begin practices and training activities adequately hydrated.

Rationale: While proper hydration alone will not necessarily prevent exertional heat illness, it will decrease risk.

5. Recognize early signs of distress and developing exertional heat illness, and promptly adjust activity and treat appropriately. First aid should not be delayed!

Rationale: An athlete will often show early signs and/or symptoms of developing exertional heat illness. If these signs and symptoms are promptly recognized and the athlete is appropriately treated, serious injury can be averted and the athlete can often be treated, rested and returned to activity when the signs and symptoms have resolved.

6. Recognize more serious signs of exertional heat illness (clumsiness, stumbling, collapse, obvious behavioral changes and/or other central nervous system problems), immediately stop activity and promptly seek medical attention by activating the Emergency Medical System. On-site rapid cooling should begin immediately.

Rationale: Immediate medical treatment and prompt rapid cooling can prevent death or minimize further injury in the athlete with EHS. Ideally, pools or tubs of ice water to be used for rapid cooling of athletes should be available on-site and personnel should be trained and practiced in using these facilities for rapid cooling. Ice water baths are the preferred method for rapid cooling, however, if ice water pools or tubs are not available, then applying ice packs to the neck, axillae, and groin and rotating ice watersoaked towels to all other areas of the body can be effective in cooling an affected athlete.

 An Emergency Action Plan with clearly defined written and practiced protocols should be developed and in place ahead of time.

Rationale: An effective emergency action plan (EAP) should be in place in case of any emergency, as a prompt and appropriate response in any emergency situation can save a life. The EAP should be designed and practiced to address all teams (freshman, junior varsity, varsity) and all practice and game sites.

References:

American Academy of Pediatrics. Policy Statement—Climatic Heat Stress and Exercising Children and Adolescents. Pediatrics. 2011:128(3):e741-7.

Andersen JC, Courson RW, Kleiner DM, McLoda TA. *National Athletic Trainers' Association Position Statement: Emergency Planning in Athletics. Journal of Athletic Training*. 2002:37:99-104.

Casa DJ, et al. National Athletic Trainers' Association Position Statement: Preventing Sudden Death in Sports. Journal of Athletic Training 2012:47(1):96-118.

Casa DJ, Csillan D. Inter-Association Task Force for Preseason Secondary School Athletics. Preseason Heat-acclimatization Guidelines for Secondary School Athletics. Journal of Athletic Training. 2009:44:332-3.

Approved April 2012 DISCLAIMER – NFHS Position Statements and Guidelines

The NFHS regularly distributes position statements and guidelines to promote public awareness of certain health and safety-related issues. Such information is neither exhaustive nor necessarily applicable to all circumstances or individuals, and is no substitute for consultation with appropriate health-care professionals. Statutes, codes or environmental conditions may be relevant. NFHS position statements or guidelines should be considered in conjunction with other pertinent materials when taking action or planning care. The NFHS reserves the right to rescind or modify any such document at any time.

MHSAA Model Policy for Managing Heat & Humidity

Adopted March 22, 2013

- 1. Thirty minutes prior to the start of an activity, and again 60 minutes after the start of that activity, take temperature and humidity readings at the site of the activity. Using a digital sling psychrometer is recom-mended. Record the readings in writing and maintain the information in files of school administration. Each school is to designate whose duties these are: generally the athletic director, head coach or certified athletic trainer.
- 2. Factor the temperature and humidity into the Heat Index Calculator and Chart to determine the Heat Index. If a digital sling psychrometer is being used, the calculation is automatic.

3. If the Heat Index is below 95 degrees:

All Sports

- o Provide ample amounts of water. This means that water should always be available and athletes should be able to take in as much water as they desire.
- o Optional water breaks every 30 minutes for 10 minutes in duration.
- Ice-down towels for cooling.
- o Watch/monitor athletes carefully for necessary action.

If Heat Index is 95 to 99 degrees:

All Sports —

- o Provide ample amounts of water. This means that water should always be available and athletes should be able to take in as much water as they desire.
- Optional water breaks every 30 minutes for 10 minutes in duration.
- o Ice-down towels for cooling.
- o Watch/monitor athletes carefully for necessary action.

Contact sports and activities with additional equipment:

- o Provide ample amounts of water. This means that water should always be available and athletes should be able to take in as much water as they desire.
- Optional water breaks every 30 minutes for 10 minutes in duration.
- Ice-down towels for cooling.
- o Watch/monitor athletes carefully for necessary action.

Contact sports and activities with additional equipment:

Helmets and other possible equipment removed while not involved in contact.

Reduce time of outside activity. Consider postponing practice to later in the day.

Recheck temperature and humidity every 30 minutes to monitor for increased Heat Index.

If Heat Index is 99 to 104 degrees: All Sports —

- Provide ample amounts of water. This means that water should always be available and athletes should be able to take in as much water as they desire.
- o Mandatory water breaks every 30 minutes for 10 minutes in duration.
- o Ice-down towels for cooling.
- o Watch/monitor athletes carefully for necessary action.
- o Alter uniform by removing items if possible.
- o Allow for changes to dry t-shirts and shorts.
- Reduce time of outside activity as well as indoor activity if air conditioning is unavailable.
- o Postpone practice to later in the day.

Contact sports and activities with additional equipment:

- If helmets or other protective equipment are required to be worn by rule or normal practice, suspend practice or competition immediately and resumption may not occur until the index is 99 degrees or below.
- Recheck temperature and humidity every 30 minutes to monitor for increased Heat Index.

If Heat Index above 104 degrees:

All Sports

o Stop all outside activity in practice and/or play, and stop all inside activity if air conditioning is unavailable.

Note: When the temperature is below 80 degrees there is no combination of heat and humidity that will result in need to curtail activity.

— See Next page for Heat Index Chart —

HEAT INDEX CALCULATION AND CHART

Temperature (Fahrenheit)

99		84	87	91	94	98	102	106	111	116	120	125	131	136	142	147	153	160	166	172	179	186	193
98		84	87	90	94	98	102	106	110	115	120	124	130	135	140	146	152	158	164	171	177	184	191
97		84	87	90	94	97	101	105	110	114	119	124	129	134	139	145	151	157	163	169	176	182	189
96		83	87	90	93	97	101	105	109	113	118	123	128	133	138	144	149	155	161	167	174	180	187
95	-	83	86	90	93	97	100	104	108	113	117	122	127	132	137	142	148	154	160	166	172	179	185
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94	-	83	86	89	93	96	100	104	108	112	116	121	126	131	136	141	147	152	158	164	170	177	183
93		83	86	89	92	96	99	103	107	111	116	120	125	130	135	140	145	151	157	162	169	175	181
92		83	86	89	92	95	99	103	106	111	115	119	124	129	133	139	144	149	155	161	167	173	179
91		83	86	89	92	95	98	102	106	110	114	118	123	127	132	137	143	148	154	159	165	171	178
90		83	86	88	91	95	98	102	105	109	113	117	122	126	131	136	141	147	152	158	164	170	176
89		83	85	88	91	94	98	101	105	109	113	117	121	125	130	135	140	145	151	156	162	168	174
88	-				91	94	97	101	104	108			120	125	129			144	149				
	-	83	85	88							112	116				134	139			155	160	166	172
87		83	85	88	91	94	97	100	104	107	111	115	119	124	128	133	138	143	148	153	159	164	170
86		83	85	88	90	93	96	100	103	107	110	114	118	123	127	132	136	141	146	152	157	163	168
85		83	85	87	90	93	96	99	102	106	110	113	117	122	126	130	135	140	145	150	155	161	167
84		83	85	87	90	93	96	99	102	105	109	113	117	121	125	129	134	139	144	149	154	159	165
83	+	82	85	87	90	92	95	98	101	105	108	112	116	120	124	128	133	137	142	147	152	158	163
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82		82	85	87	89	92	95	98	101	104	108	111	115	119	123	127	132	136	141	146	151	156	162
81		82	84	87	89	92	94	97	100	104	107	110	114	118	122	126	131	135	140	144	149	155	160
80		82	84	86	89	91	94	97	100	103	106	110	113	117	121	125	129	134	138	143	148	153	158
79		82	84	86	89	91	94	96	99	102	106	109	113	116	120	124	128	133	137	142	146	151	157
78		82	84	86	88	91	93	96	99	102	105	108	112	115	119	123	127	131	136	140	145	150	155
77	+					90		96	98	101	104	108	111	115	118	122	126	130	135	139	144	148	153
	-	82	84	86	88		93																
76		82	84	86	88	90	93	95	98	101	104	107	110	114	117	121	125	129	133	138	142	147	152
75		82	84	85	88	90	92	95	97	100	103	106	109	113	116	120	124	128	132	136	141	145	150
74		82	83	85	87	90	92	94	97	100	103	106	109	112	116	119	123	127	131	135	140	144	149
73		82	83	85	87	89	91	94	96	99	102	105	108	111	115	118	122	126	130	134	138	143	147
72	1	82	83	85	87	89	91	93	96	99	101	104	107	111	114	117	121	125	129	133	137	141	146
71		81	83	85	87	89	91	93	96	98	101	104	107	110	113	116	120	124	127	131	136	140	144
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70		81	83	85	86	88	90	93	95	98	100	103	106	109	112	116	119	123	126	130	134	138	143
69		81	83	84	86	88	90	92	95	97	100	102	105	108	111	115	118	122	125	129	133	137	141
68		81	83	84	86	88	90	92	94	97	99	102	105	108	111	114	117	121	124	128	132	136	140
67	Т	81	83	84	86	88	90	92	94	96	99	101	104	107	110	113	116	120	123	127	131	135	139
66	_	81	82	84	86	87	89	91	93	96	98	101	103	106	109	112	115	119	122	126	129	133	137
	-	81					89	91	93		98	100			108			118	121			132	136
65	_		82	84	85	87				95			103	105		111	114			125	128		
64		81	82	84	85	87	89	91	93	95	97	99	102	105	108	110	114	117	120	123	127	131	135
63		81	82	84	85	87	88	90	92	94	97	99	101	104	107	110	113	116	119	122	126	130	133
62		81	82	83	85	86	88	90	92	94	96	98	101	103	106	109	112	115	118	121	125	128	132
61		81	82	83	85	86	88	90	91	93	96	98	100	103	105	108	111	114	117	120	124	127	131
60	+	81	82	83	84	86	88	89	91	93	95	97	100	102	105	107	110	113	116	119	123	126	129
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59	-	81	82	83	84	86	87	89	91	93	95	97	99	102	104	107	109	112	115	118	122	125	128
58		81	82	83	84	85	87	89	90	92	94	96	99	101	103	106	109	111	114	117	120	124	127
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57		80	81	83	84	85	87	88	90	92	94	96	98	100	103	105	108	111	113	116	119	123	126
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57 56		80	81	83	84	85	86	88	90	92	93	95	98	100	102	105	107	110	113	115	118	122	125
57 56 55		80 80	81 81	83 82	84 84	85 85	86 86	88 88	90 89	92 91	93 93	95 95	98 97	100 99	102 101	105 104	107 106	110 109	113 112	115 114	118 117	122 120	125 124
57 56 55 54		80 80 80	81 81 81	83 82 82	84 84 83	85 85 85	86 86 86	88 88 87	90 89 89	92 91 91	93 93 93	95 95 94	98 97 96	100 99 99	102 101 101	105 104 103	107 106 106	110 109 108	113 112 111	115 114 114	118 117 116	122 120 119	125 124 123
57 56 55 54 53		80 80 80	81 81 81 81	83 82 82 82	84 84 83 83	85 85 85 84	86 86 86 86	88 88 87 87	90 89 89 89	92 91 91 90	93 93 93 92	95 95 94 94	98 97 96 96	99 99 98	102 101 101 100	105 104 103 103	107 106 106 105	110 109 108 107	113 112 111 110	115 114 114 113	118 117 116 116	122 120 119 118	125 124 123 121
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57 56 55 54 53 52 51 50 49		80 80 80 80 80 80 80 80	81 81 81 81 81 81 81 81	83 82 82 82 82 82 82 82 81	84 84 83 83 83 83 83 83 83	85 85 85 84 84 84 84 84 84	86 86 86 86 86 85 85 85	88 88 87 87 87 87 86 86	90 89 89 89 88 88 88 88	92 91 91 90 90 90 89 89	93 93 93 92 92 91 91 91	95 95 94 94 94 93 93 93 92 92	98 97 96 96 96 95 95 94 94	100 99 99 98 98 97 97 96	102 101 101 100 100 99 99 98 97	105 104 103 103 102 101 101 100 100	107 106 106 105 104 104 103 102	110 109 108 107 107 106 105 105	113 112 111 110 109 108 108 107	115 114 114 113 112 111 110 109	118 117 116 116 115 114 113 112 111	122 120 119 118 117 116 115 115	125 124 123 121 120 119 118 117
57 56 55 54 53 52 51 50 49 48		80 80 80 80 80 80 80 80 80	81 81 81 81 81 81 81 81 81	83 82 82 82 82 82 82 82 81 81	84 84 83 83 83 83 83 83 82 82	85 85 85 84 84 84 84 84 84 84	86 86 86 86 86 85 85 85 85	88 88 87 87 87 87 86 86 86	90 89 89 89 88 88 88 88 87	92 91 91 90 90 90 89 89 89 88	93 93 93 92 92 91 91 91 90	95 95 94 94 94 93 93 92 92 92	98 97 96 96 96 95 95 94 94	100 99 99 98 98 97 97 96 96	102 101 101 100 100 99 99 98 97 97	105 104 103 103 102 101 101 100 100 99	107 106 106 105 104 104 103 102 102	110 109 108 107 107 106 105 105 104 103	113 112 111 110 109 108 108 107 106	115 114 114 113 112 111 110 109 109	118 117 116 116 115 114 113 112 111	122 120 119 118 117 116 115 115 114	125 124 123 121 120 119 118 117 116
57 56 55 54 53 52 51 50 49 48 47 46		80 80 80 80 80 80 80 80 80 80	81 81 81 81 81 81 81 81 81 81	83 82 82 82 82 82 82 82 81 81	84 84 83 83 83 83 83 83 82 82 82	85 85 85 84 84 84 84 84 84 83	86 86 86 86 85 85 85 85 85 85	88 88 87 87 87 86 86 86 86	90 89 89 89 88 88 88 87 87	92 91 91 90 90 90 89 89 89 88 88	93 93 93 92 92 91 91 91 90 90	95 94 94 94 93 93 92 92 92 91	98 97 96 96 95 95 94 94 93	100 99 99 98 98 97 97 96 96 95	102 101 101 100 100 99 99 98 97 97 97	105 104 103 103 102 101 101 100 100 99 98	107 106 106 105 104 104 103 102 102 101 100	110 109 108 107 107 106 105 105 104 103	113 112 111 110 109 108 108 107 106 105	115 114 114 113 112 111 110 109 109 108	118 117 116 116 115 114 113 112 111 110	122 120 119 118 117 116 115 115 114 113	125 124 123 121 120 119 118 117 116 115
57 56 55 54 53 52 51 50 49 48 47 46 45		80 80 80 80 80 80 80 80 80 80 80	81 81 81 81 81 81 81 81 81 80 80	83 82 82 82 82 82 82 82 81 81 81	84 84 83 83 83 83 83 82 82 82 82	85 85 85 84 84 84 84 84 83 83 83	86 86 86 86 86 85 85 85 85 85 84	88 88 87 87 87 87 86 86 86 86	90 89 89 89 88 88 88 87 87 87	92 91 91 90 90 90 89 89 89 88 88 88	93 93 93 92 92 91 91 91 90 90 90	95 95 94 94 94 93 93 92 92 92 91 91	98 97 96 96 95 95 94 94 93 93	99 99 98 98 97 97 96 96 95 95	102 101 101 100 100 99 99 98 97 97 96	105 104 103 103 102 101 101 100 100 99 98 98	107 106 106 105 104 104 103 102 102 101 100	110 109 108 107 107 106 105 105 104 103 103	113 112 111 110 109 108 108 107 106 105 105	115 114 114 113 112 111 110 109 109 108 107	118 117 116 116 115 114 113 112 111 110 109	122 120 119 118 117 116 115 115 114 113 112	125 124 123 121 120 119 118 117 116 115 114 114
57 56 55 54 53 52 51 50 49 48 47 46 45		80 80 80 80 80 80 80 80 80 80 80	81 81 81 81 81 81 81 81 81 80 80	83 82 82 82 82 82 82 82 81 81 81	84 84 83 83 83 83 83 83 82 82 82 82	85 85 85 84 84 84 84 84 83 83 83	86 86 86 86 85 85 85 85 85 85 84	88 88 87 87 87 87 86 86 86 86 86 86	90 89 89 89 88 88 88 88 87 87 87 87	92 91 91 90 90 90 89 89 89 88 88 88	93 93 93 92 92 91 91 91 90 90 90 89	95 95 94 94 94 93 93 92 92 92 92 91 91	98 97 96 96 95 95 94 94 93 93 92	99 99 98 98 97 97 96 96 95 95 94	102 101 101 100 100 99 99 98 97 97 96 96	105 104 103 103 102 101 101 100 100 99 98 98 97	107 106 106 105 104 104 103 102 102 101 100 100 99	110 109 108 107 107 106 105 105 104 103 103 102	113 112 111 110 109 108 108 107 106 105 105 104	115 114 114 113 112 111 110 109 109 108 107 106	118 117 116 116 115 114 113 112 111 110 109 109	122 120 119 118 117 116 115 115 114 113 112 111	125 124 123 121 120 119 118 117 116 115 114 114 113
57 56 55 54 53 52 51 50 49 48 47 46 45 44		80 80 80 80 80 80 80 80 80 80 80 80	81 81 81 81 81 81 81 81 81 80 80	83 82 82 82 82 82 82 82 81 81 81	84 84 83 83 83 83 83 82 82 82 82	85 85 85 84 84 84 84 84 83 83 83	86 86 86 86 86 85 85 85 85 85 84	88 88 87 87 87 87 86 86 86 86	90 89 89 89 88 88 88 87 87 87	92 91 91 90 90 90 89 89 89 88 88 88	93 93 93 92 92 91 91 91 90 90 90	95 95 94 94 94 93 93 92 92 92 91 91 91	98 97 96 96 95 95 94 94 93 93	99 99 98 98 97 97 96 96 95 95 94 94	102 101 101 100 100 99 99 98 97 97 96	105 104 103 103 102 101 101 100 100 99 98 98	107 106 106 105 104 104 103 102 102 101 100	110 109 108 107 107 106 105 105 104 103 103	113 112 111 110 109 108 108 107 106 105 105	115 114 114 113 112 111 110 109 109 108 107	118 117 116 116 115 114 113 112 111 110 109	122 120 119 118 117 116 115 115 114 113 112	125 124 123 121 120 119 118 117 116 115 114 114 113 112
57 56 55 54 53 52 51 50 49 48 47 46 45		80 80 80 80 80 80 80 80 80 80 80	81 81 81 81 81 81 81 81 81 80 80	83 82 82 82 82 82 82 82 81 81 81	84 84 83 83 83 83 83 83 82 82 82 82	85 85 85 84 84 84 84 84 83 83 83	86 86 86 86 85 85 85 85 85 85 84	88 88 87 87 87 87 86 86 86 86 86 86	90 89 89 89 88 88 88 88 87 87 87 87	92 91 91 90 90 90 89 89 89 88 88 88	93 93 93 92 92 91 91 91 90 90 90 89	95 95 94 94 94 93 93 92 92 92 92 91 91	98 97 96 96 95 95 94 94 93 93 92	99 99 98 98 97 97 96 96 95 95 94	102 101 101 100 100 99 99 98 97 97 96 96	105 104 103 103 102 101 101 100 100 99 98 98 97	107 106 106 105 104 104 103 102 102 101 100 100 99	110 109 108 107 107 106 105 105 104 103 103 102	113 112 111 110 109 108 108 107 106 105 105 104	115 114 114 113 112 111 110 109 109 108 107 106	118 117 116 116 115 114 113 112 111 110 109 109	122 120 119 118 117 116 115 115 114 113 112 111	125 124 123 121 120 119 118 117 116 115 114 114 113
57 56 55 54 53 52 51 50 49 48 47 46 45 44 43		80 80 80 80 80 80 80 80 80 80 80 80 79	81 81 81 81 81 81 81 81 81 80 80 80	83 82 82 82 82 82 82 82 81 81 81 81 81	84 84 83 83 83 83 83 82 82 82 82 82 82 82	85 85 85 84 84 84 84 84 83 83 83 83 83	86 86 86 86 85 85 85 85 85 84 84 84	88 88 87 87 87 87 86 86 86 86 86 85 85	90 89 89 89 88 88 88 87 87 87 87 86 86	92 91 91 90 90 90 89 89 89 88 88 88 88 87 87	93 93 93 92 92 91 91 91 90 90 90 89 89 89	95 95 94 94 94 93 93 92 92 92 91 91 91 90	98 97 96 96 95 95 94 94 93 93 92 92 91	99 99 98 98 97 97 96 96 95 95 94 94 93	102 101 101 100 100 99 98 97 97 96 96 96	105 104 103 103 102 101 101 100 100 99 98 98 97 97	107 106 106 105 104 103 102 102 101 100 99 99 98	110 109 108 107 107 106 105 105 104 103 103 102 101 101	113 112 111 110 109 108 108 107 106 105 105 104 103 103	115 114 114 113 112 111 110 109 109 108 107 106 106	118 117 116 116 115 114 113 1112 111 110 109 109 108 107	122 120 119 118 117 116 115 115 114 113 112 111 110 109	125 124 123 121 120 119 118 117 116 115 115 114 114 113 112
57 56 55 54 53 52 51 50 49 48 47 46 45 44 42 41		80 80 80 80 80 80 80 80 80 80 80 80 79 79	81 81 81 81 81 81 81 81 80 80 80 80	83 82 82 82 82 82 82 82 81 81 81 81 81 81	84 84 83 83 83 83 83 82 82 82 82 82 82 82 82 82	85 85 85 84 84 84 84 84 83 83 83 83 83 83	86 86 86 86 85 85 85 85 85 84 84 84 84 84	88 88 87 87 87 87 86 86 86 86 86 85 85 85	90 89 89 89 88 88 88 87 87 87 87 86 86	92 91 91 90 90 90 89 89 89 88 88 88 88 87 87	93 93 93 92 92 91 91 91 90 90 89 89 89 88 88	95 95 94 94 94 93 93 92 92 92 91 91 91 90 90	98 97 96 96 95 95 94 94 93 93 92 92 91 91	99 99 98 98 97 97 96 96 95 95 94 94 93	102 101 100 100 100 99 98 97 97 96 96 96 95 95	105 104 103 103 102 101 101 100 99 98 98 98 97 97 97	107 106 106 105 104 104 103 102 101 100 100 99 99 98	110 109 108 107 106 105 105 104 103 103 102 101 101 100	113 112 111 110 109 108 108 107 106 105 105 104 103 103 102	115 114 114 113 1112 111 110 109 108 107 106 106 105 104	118 117 116 116 115 114 113 112 111 110 109 109 108 107 106	122 120 119 118 117 116 115 115 114 113 112 111 110 109 109	125 124 123 121 120 119 118 117 116 115 114 114 113 112 111
57 56 54 53 52 51 50 49 48 47 46 45 44 43 42 41		80 80 80 80 80 80 80 80 80 80 80 80 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80	83 82 82 82 82 82 82 82 81 81 81 81 81 81	84 84 83 83 83 83 83 82 82 82 82 82 82 82 82 82 82	85 85 85 84 84 84 84 84 83 83 83 83 83 83 83 82	86 86 86 86 86 85 85 85 85 84 84 84 84 84 83	88 88 87 87 87 87 86 86 86 86 85 85 85 85	90 89 89 89 88 88 88 87 87 87 87 86 86 86 86	92 91 91 90 90 90 89 89 88 88 88 88 87 87	93 93 93 92 92 91 91 91 90 90 89 89 89 88 88 88	95 95 94 94 94 93 93 92 92 91 91 91 90 90 89	98 97 96 96 95 94 94 93 93 92 92 92 91 91	99 99 98 98 97 97 96 96 95 95 94 94 94 93 93	102 101 100 100 100 99 98 97 97 96 96 96 95 95 94	105 104 103 103 102 101 100 100 99 98 98 97 97 96 96	107 106 106 105 104 104 102 102 101 100 100 99 98 98 98	110 109 108 107 107 106 105 104 103 103 102 101 101 100 99	113 112 111 110 109 108 108 107 106 105 105 104 103 103 102 101	115 114 114 113 112 111 110 109 108 107 106 106 105 104 104	118 117 116 116 115 114 113 112 111 110 109 109 108 107 106 106	122 120 119 118 117 116 115 115 114 113 112 111 110 109 109 108	125 124 123 121 120 119 118 117 116 115 114 114 113 112 111 110
57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40 39		80 80 80 80 80 80 80 80 80 80 80 80 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80	83 82 82 82 82 82 82 82 81 81 81 81 81 81 81	84 84 83 83 83 83 83 82 82 82 82 82 82 82 82 82 82 82	85 85 85 84 84 84 84 83 83 83 83 83 83 83 83 83	86 86 86 86 85 85 85 85 85 84 84 84 84 83 83	88 88 87 87 87 86 86 86 86 86 85 85 85 85 85	90 89 89 88 88 88 88 87 87 87 86 86 86 86 86	92 91 91 90 90 90 89 89 88 88 88 88 87 87 87 87	93 93 93 92 92 91 91 90 90 89 89 88 88 88 88	95 95 94 94 94 93 93 92 92 92 91 91 91 90 90 89	98 97 96 96 95 95 94 94 93 92 92 92 91 91 90	99 99 98 98 97 97 96 96 95 95 94 94 93 93 93 93	102 101 101 100 99 98 97 96 96 96 95 95 94	105 104 103 103 102 101 101 100 100 99 98 98 97 97 96 96 95	107 106 106 105 104 104 103 102 102 101 100 100 99 99 98 98 97	110 109 108 107 106 105 105 104 103 103 102 101 101 100 99	113 112 111 110 109 108 107 106 105 105 104 103 103 102 101 101	115 114 114 113 112 111 110 109 109 108 107 106 106 105 104 104 103	118 117 116 116 115 114 113 112 111 110 109 109 108 107 106 105	122 120 119 118 117 116 115 115 114 113 112 111 110 109 109 108 107	125 124 123 121 120 119 118 117 116 115 114 114 113 112 111 110 109 108
57 56 54 53 52 51 51 50 49 48 47 46 45 44 44 43 39 39 38		80 80 80 80 80 80 80 80 80 80 80 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80	83 82 82 82 82 82 82 81 81 81 81 81 81 81 81 81	84 84 83 83 83 83 83 82 82 82 82 82 82 82 82 82 81 81	85 85 85 84 84 84 84 83 83 83 83 83 82 82 82	86 86 86 86 85 85 85 85 85 84 84 84 84 83 83 83	88 88 87 87 87 86 86 86 86 85 85 85 85 84	90 89 89 88 88 88 88 87 87 87 87 86 86 86 86 85	92 91 91 90 90 89 89 88 88 88 88 87 87 87 87 86	93 93 93 92 92 91 91 91 90 90 89 89 88 88 88 88 88	95 95 94 94 94 93 93 92 92 92 91 91 91 90 90 90 89 89	98 97 96 96 95 95 94 94 93 92 92 91 91 91 90 90	99 99 98 98 97 97 96 96 95 95 94 94 93 93 93 92 92	102 101 101 100 100 99 98 97 97 96 96 96 95 95 94 93	105 104 103 103 102 101 101 100 100 99 98 98 97 97 96 96 96 95	107 106 106 105 104 104 103 102 102 101 100 100 99 98 98 98 97 97	110 109 108 107 106 105 105 104 103 102 101 101 100 100 99 98 98	113 112 111 110 109 108 107 106 105 105 104 103 103 102 101 101 100	115 114 114 113 112 111 110 109 109 108 107 106 106 105 104 104 103 102	118 117 116 116 115 114 113 112 111 110 109 109 108 107 106 106 105 104	122 120 119 118 117 116 115 115 114 113 112 111 110 109 109 108 107 106	125 124 123 121 120 119 118 117 116 115 114 114 113 112 111 110 109 108
57 56 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 38		80 80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80	83 82 82 82 82 82 82 81 81 81 81 81 81 81 81 81 81 81 81 81	84 84 83 83 83 83 83 82 82 82 82 82 82 82 81 81 81	85 85 85 84 84 84 84 83 83 83 83 83 83 82 82 82 82	86 86 86 86 85 85 85 85 85 84 84 84 84 83 83 83 83	88 88 87 87 87 86 86 86 86 85 85 85 85 84 84	90 89 89 89 88 88 88 87 87 87 87 86 86 86 85 85	92 91 91 90 90 90 89 89 88 88 88 88 87 87 87 87 86 86	93 93 93 92 92 91 91 91 90 90 90 89 89 88 88 88 88 88	95 95 94 94 93 93 92 92 91 91 91 90 90 89 89 89	98 97 96 96 95 95 94 93 93 92 92 91 91 90 90	99 99 98 98 97 97 96 95 95 94 94 94 93 93 93 92 92 92	102 101 100 100 99 99 98 97 97 96 96 96 95 94 94 93	105 104 103 102 101 101 100 99 98 98 97 97 96 96 95 95	107 106 106 105 104 103 102 101 100 100 99 98 98 97 97 96	110 109 108 107 106 105 105 104 103 103 102 101 101 100 99 98 98	113 112 111 110 109 108 108 107 106 105 105 104 103 103 102 101 101 100 99	115 114 114 113 112 111 110 109 108 107 106 106 105 104 104 103 103 102	118 117 116 116 115 114 113 1112 110 109 109 109 100 106 106 105 104	122 120 119 118 117 116 115 115 114 113 112 111 110 109 109 108 107 106 106	125 124 123 121 120 119 118 117 116 115 114 114 113 112 111 110 109 108 107
57 56 54 53 52 51 51 50 49 48 47 46 45 44 44 43 39 39 38		80 80 80 80 80 80 80 80 80 80 80 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80	83 82 82 82 82 82 82 81 81 81 81 81 81 81 81 81	84 84 83 83 83 83 83 82 82 82 82 82 82 82 82 82 81 81	85 85 85 84 84 84 84 83 83 83 83 83 82 82 82	86 86 86 86 85 85 85 85 85 84 84 84 84 83 83 83	88 88 87 87 87 86 86 86 86 85 85 85 85 84	90 89 89 88 88 88 88 87 87 87 87 86 86 86 86 85	92 91 91 90 90 89 89 88 88 88 88 87 87 87 87 86	93 93 93 92 92 91 91 91 90 90 89 89 88 88 88 88 88	95 95 94 94 94 93 93 92 92 92 91 91 91 90 90 90 89 89	98 97 96 96 95 95 94 94 93 92 92 91 91 91 90 90	99 99 98 98 97 97 96 96 95 95 94 94 93 93 93 92 92	102 101 101 100 100 99 98 97 97 96 96 96 95 95 94 93	105 104 103 103 102 101 101 100 100 99 98 98 97 97 96 96 96 95	107 106 106 105 104 104 103 102 102 101 100 100 99 98 98 98 97 97	110 109 108 107 106 105 105 104 103 102 101 101 100 100 99 98 98	113 112 111 110 109 108 107 106 105 105 104 103 103 102 101 101 100	115 114 114 113 112 111 110 109 109 108 107 106 106 105 104 104 103 102	118 117 116 116 115 114 113 112 111 110 109 109 108 107 106 106 105 104	122 120 119 118 117 116 115 115 114 113 112 111 110 109 109 108 107 106	125 124 123 121 120 119 118 117 116 115 114 114 113 112 111 110 109 108
57 56 555 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36		80 80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80	83 82 82 82 82 82 82 81 81 81 81 81 81 81 81 81 81 81 81 81	84 84 83 83 83 83 83 82 82 82 82 82 82 82 81 81 81	85 85 85 84 84 84 84 83 83 83 83 83 83 82 82 82 82	86 86 86 86 85 85 85 85 85 84 84 84 84 83 83 83 83	88 88 87 87 87 86 86 86 86 85 85 85 85 84 84	90 89 89 89 88 88 88 87 87 87 86 86 86 86 85 85 85	92 91 91 90 90 90 89 89 89 88 88 88 87 87 87 86 86	93 93 93 92 92 91 91 91 90 90 90 89 89 88 88 88 88 88	95 95 94 94 93 93 92 92 91 91 91 90 90 89 89 89	98 97 96 96 95 95 94 93 93 92 92 91 91 90 90	99 99 98 98 97 97 96 95 95 94 94 94 93 93 93 92 92 92	102 101 100 100 99 99 98 97 97 96 96 96 95 94 94 93	105 104 103 102 101 101 100 99 98 98 97 97 96 96 95 95	107 106 106 105 104 103 102 101 100 100 99 98 98 97 97 96	110 109 108 107 106 105 105 104 103 103 102 101 101 100 99 98 98	113 112 111 110 109 108 108 107 106 105 105 104 103 103 102 101 101 100 99	115 114 114 113 112 111 110 109 108 107 106 106 105 104 104 103 103 102	118 117 116 116 115 114 113 1112 110 109 109 109 100 106 106 105 104	122 120 119 118 117 116 115 115 114 113 112 111 110 109 109 108 107 106 106	125 124 123 121 120 119 118 117 116 115 114 114 113 112 111 110 109 108 107
57 56 55 54 53 52 51 50 49 48 47 46 44 43 42 41 40 39 38 37 36 35		80 80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 80	83 82 82 82 82 82 82 81 81 81 81 81 81 81 81 81 81 81 81 81	84 84 83 83 83 83 83 82 82 82 82 82 82 82 82 82 82 81 81 81	85 85 85 84 84 84 84 84 83 83 83 83 83 82 82 82 82	86 86 86 86 85 85 85 85 84 84 84 84 83 83 83 83 83	88 88 87 87 87 87 86 86 86 86 86 85 85 85 85 85 84 84 84	90 89 89 89 88 88 88 87 87 87 87 86 86 86 86 85 85 85	92 91 91 90 90 90 89 89 88 88 88 88 87 87 87 87 86 86 86	93 93 93 93 92 92 91 91 90 90 90 89 89 88 88 88 88 87 87	95 95 94 94 93 93 93 92 92 92 91 91 91 90 90 89 89 89 88 88	98 97 96 96 95 95 94 94 93 92 92 92 91 91 91 90 90 89 89	99 99 98 98 97 97 96 96 95 94 93 93 93 92 92 91 91	102 101 101 100 100 99 98 97 97 96 96 95 95 94 93 93 93 93	105 104 103 102 101 100 100 99 98 97 97 96 96 95 95 95	107 106 106 105 104 102 102 101 100 99 98 98 98 98 97 97 96 96	110 109 108 107 107 106 105 104 103 103 102 101 101 100 100 99 98 98 97 97	113 112 111 110 109 108 108 107 106 105 105 104 103 103 102 101 100 100 99 98	115 114 1114 1113 1112 1111 1109 109 108 107 106 106 105 104 104 103 102 102 101 100 100	118 117 116 116 115 114 113 112 111 110 109 108 107 106 106 105 104 104 103 102	122 120 119 118 117 116 115 114 113 112 111 110 109 109 108 107 106 106 105	125 124 123 121 120 119 118 117 116 115 114 113 112 111 110 109 108 108 107 106
57 56 54 53 52 51 50 49 48 47 46 45 44 41 40 39 38 38 37 36 35		80 80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 80 80	83 82 82 82 82 82 82 81 81 81 81 81 81 81 81 80 80 80	84 84 83 83 83 83 83 83 82 82 82 82 82 82 81 81 81 81	85 85 85 84 84 84 84 84 83 83 83 83 83 82 82 82 82 82 82 82 82	86 86 86 86 85 85 85 85 84 84 84 84 83 83 83 83 83 83 83 83	88 88 87 87 87 87 86 86 86 86 85 85 85 85 84 84 84 84 84	90 89 89 89 88 88 88 88 87 87 87 86 86 86 86 85 85 85 85 85	92 91 91 90 90 90 89 89 88 88 88 88 87 87 87 86 86 86 86 86	93 93 93 92 92 91 91 90 90 89 89 88 88 88 88 87 87 87	95 95 94 94 93 93 92 92 92 91 91 91 90 90 89 89 89 88 88 88 88	98 97 96 96 95 95 94 94 93 92 92 92 91 91 90 90 89 89	99 99 98 98 97 96 96 95 94 94 93 93 93 92 92 91 91 90	102 101 101 100 100 99 98 97 97 96 96 96 95 94 94 93 93 93 93 92	105 104 103 103 102 101 100 100 99 98 97 97 97 96 96 95 95 95 94 94	107 106 106 105 104 103 102 102 101 100 100 99 98 98 97 97 96 96 95	110 109 108 107 107 105 105 104 103 102 101 101 100 99 98 97 97 97 96	113 112 111 110 109 108 107 106 105 104 103 103 103 101 101 101 100 99 99 98	115 114 114 113 112 111 110 109 109 108 107 106 106 106 104 104 103 102 102 101 100 99	118 117 116 116 115 114 113 112 111 110 109 109 108 107 106 106 105 104 104 103 102 102	122 120 119 118 117 116 115 115 114 113 111 110 109 108 107 106 106 105 104 104	125 124 123 121 120 119 118 117 116 115 114 114 113 112 110 109 108 108 107 106 105
57 56 54 53 52 51 50 49 48 47 46 45 44 41 40 39 38 38 37 36 35 34 33		80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 80 80 80 80	83 82 82 82 82 82 82 82 81 81 81 81 81 81 81 81 81 81 81 81 81	84 84 83 83 83 83 83 83 82 82 82 82 82 82 82 81 81 81 81	85 85 85 84 84 84 84 83 83 83 83 83 82 82 82 82 82 82 82 82	86 86 86 86 85 85 85 85 84 84 84 84 83 83 83 83 83 83 83 83 83	88 88 87 87 87 86 86 86 86 85 85 85 85 85 84 84 84 84 84 84	90 89 89 88 88 88 88 87 87 87 87 87 86 86 86 86 85 85 85 85 85 85 84	92 91 91 90 90 90 89 89 88 88 88 88 87 87 87 87 86 86 86 86 86 85	93 93 93 92 92 91 91 91 90 90 90 89 89 88 88 88 88 88 88 88 87 87 87	95 95 94 94 93 93 92 92 91 91 91 90 90 89 89 89 88 88 88 88 88	98 97 96 96 95 95 94 94 93 93 92 92 92 91 91 91 90 90 89 89 89	99 99 98 98 97 97 96 96 95 95 94 94 93 93 93 92 92 92 92 91 91 90 90	102 101 101 100 100 99 98 97 97 96 96 96 95 94 94 93 93 93 92 92 92	105 104 103 102 101 100 100 99 98 98 97 97 97 96 96 95 95 95 94 94 93	107 106 106 105 104 103 102 102 101 100 99 99 98 98 97 97 96 96 95 94	110 109 108 107 107 106 105 104 103 103 102 101 101 100 99 98 98 97 97 96 96	113 112 111 110 109 108 108 107 106 105 105 104 103 103 102 101 101 100 100 99 99 98 98 98	115 114 114 113 112 111 110 109 108 106 106 106 105 104 104 103 102 101 100 100 99	118 117 116 116 115 114 113 112 111 110 109 109 108 107 106 106 106 106 104 104 104 103 102 101 101	122 120 119 118 117 116 115 114 113 112 111 110 109 108 107 106 105 104 104 103 102	125 124 123 121 120 119 118 117 116 115 114 113 112 111 110 109 108 108 107 106 106 106 106
57 56 555 54 53 52 51 50 49 48 47 46 45 44 41 40 39 38 37 36 35 34 33 33 32		80 80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 80 80 80 80	83 82 82 82 82 82 82 81 81 81 81 81 81 81 81 81 81 81 81 81	84 84 83 83 83 83 83 82 82 82 82 82 82 82 81 81 81 81 81	85 85 85 84 84 84 84 83 83 83 83 83 82 82 82 82 82 82 82 82 82 82 82	86 86 86 86 85 85 85 85 84 84 84 84 83 83 83 83 83 83 83 83	88 88 87 87 87 86 86 86 86 85 85 85 85 85 84 84 84 84 84 84	90 89 89 88 88 88 88 87 87 87 87 86 86 86 86 85 85 85 85 85 84	92 91 91 90 90 90 89 89 88 88 88 87 87 87 87 86 86 86 86 86 85	93 93 93 92 92 91 91 90 90 90 90 89 89 88 88 88 88 87 87 87 86 86	95 95 94 94 93 93 93 92 92 92 91 91 90 90 89 89 89 88 88 88 88 88 88	98 97 96 96 95 95 94 94 93 93 92 92 91 91 90 90 90 89 89 89 89 88	99 99 98 98 97 97 96 96 95 95 94 94 93 93 93 92 92 91 91 90 90	102 101 101 100 100 99 98 97 97 96 96 96 95 95 94 94 93 93 93 93 92 92 92 91	105 104 103 102 101 101 100 100 99 98 97 97 96 95 95 95 94 94 93 93	107 106 106 105 104 102 102 101 100 99 99 98 97 97 96 95 95 94	110 109 108 107 107 106 105 104 103 103 102 101 101 100 99 98 98 98 97 97 96 96 96	113 1112 1111 1100 109 108 108 107 106 105 105 105 104 103 103 100 101 101 100 100 99 98 98 98 97	115 114 114 1113 1112 1111 1109 109 108 107 106 106 105 104 104 103 102 101 100 100 99 98	118 117 116 116 115 114 113 112 111 110 109 108 107 106 105 104 104 103 102 102 101 101	122 120 119 118 117 116 115 114 113 111 110 109 109 108 107 106 106 105 104 104 104 103 102	125 124 123 121 120 119 118 117 116 115 114 113 112 111 100 109 108 108 107 106 106 105
57 56 55 54 53 52 51 50 49 48 47 46 45 44 41 40 39 38 37 36 36 37 36 36 37 37 36 37 37 38 37 37 38 38 38 38 38 38 38 38 38 38 38 38 38		80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 80 80 80 80	83 82 82 82 82 82 82 81 81 81 81 81 81 81 81 80 80 80 80 80 80	84 84 84 83 83 83 83 83 82 82 82 82 82 82 82 81 81 81 81 81 81	85 85 85 84 84 84 84 84 83 83 83 83 83 82 82 82 82 82 82 82 82 82 82 82	86 86 86 86 85 85 85 85 84 84 84 84 83 83 83 83 83 83 83 83 83	88 88 87 87 87 86 86 86 86 86 85 85 85 85 84 84 84 84 84 84 83 83 83 83	90 89 89 88 88 88 88 87 87 87 86 86 86 85 85 85 85 85 84 84	92 91 91 90 90 90 90 89 89 88 88 88 87 87 87 87 86 86 86 86 86 85 85	93 93 93 92 92 91 91 91 90 90 89 89 88 88 88 88 87 87 87 87 86 86 86	95 95 94 94 94 93 92 92 92 91 91 90 90 89 89 88 88 88 88 88 88 87	98 97 96 96 95 95 94 94 93 92 92 92 91 91 90 90 90 89 89 89 89 88 88	99 99 98 98 97 96 96 95 95 94 94 94 93 93 93 92 91 91 90 90 90 89	102 101 101 100 100 99 98 97 97 96 96 96 95 95 94 94 94 93 93 93 92 92 91 91	105 104 103 103 102 101 100 100 98 98 97 97 96 96 95 95 95 94 94 94 94 94	107 106 106 105 104 103 102 102 101 100 100 99 98 98 97 96 96 95 94 94	110 109 108 107 107 105 105 104 103 102 101 101 100 99 98 98 97 97 97 96 96 96 96 95	113 1112 1111 110 109 108 107 106 105 104 103 103 102 101 101 100 99 99 98 98 98 97 97	115 114 114 113 112 111 110 109 109 108 107 106 106 105 104 104 103 102 102 101 100 100 99 99 98	118 117 116 116 115 1114 113 112 1110 109 109 108 107 106 106 105 104 104 103 102 102 101 101 100 99	122 120 119 118 117 116 115 115 114 113 112 111 110 109 108 107 106 106 106 105 104 103 102 102 102	125 124 123 121 120 119 118 117 116 115 114 114 113 111 110 109 108 107 106 106 105 104 104
57 56 54 53 52 51 50 49 48 47 46 45 44 41 40 39 38 37 36 33 34 33 31		80 80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 80 80 80 80	83 82 82 82 82 82 82 81 81 81 81 81 81 81 81 81 81 81 81 81	84 84 83 83 83 83 83 82 82 82 82 82 82 82 81 81 81 81 81	85 85 85 84 84 84 84 83 83 83 83 83 82 82 82 82 82 82 82 82 82 82 82	86 86 86 86 85 85 85 85 84 84 84 84 83 83 83 83 83 83 83 83	88 88 87 87 87 86 86 86 86 85 85 85 85 85 84 84 84 84 84 84	90 89 89 88 88 88 88 87 87 87 87 86 86 86 86 85 85 85 85 85 84	92 91 91 90 90 90 89 89 88 88 88 87 87 87 87 86 86 86 86 86 85	93 93 93 92 92 91 91 90 90 90 90 89 89 88 88 88 88 87 87 87 86 86	95 95 94 94 93 93 93 92 92 92 91 91 90 90 89 89 89 88 88 88 88 88 88	98 97 96 96 95 95 94 94 93 93 92 92 91 91 90 90 90 89 89 89 89 88	99 99 98 98 97 97 96 96 95 95 94 94 93 93 93 92 92 91 91 90 90	102 101 101 100 100 99 98 97 97 96 96 96 95 95 94 94 93 93 93 93 92 92 92 91	105 104 103 102 101 101 100 100 99 98 97 97 96 95 95 95 94 94 93 93	107 106 106 105 104 102 102 101 100 99 99 98 97 97 96 95 95 94	110 109 108 107 107 106 105 104 103 103 102 101 101 100 99 98 98 98 97 97 96 96 96	113 1112 1111 1100 109 108 108 107 106 105 105 105 104 103 103 100 101 101 100 100 99 98 98 98 97	115 114 114 1113 1112 1111 1109 109 108 107 106 106 105 104 104 103 102 101 100 100 99 98	118 117 116 116 115 114 113 112 111 110 109 108 107 106 105 104 104 103 102 102 101 101	122 120 119 118 117 116 115 114 113 111 110 109 109 108 107 106 106 105 104 104 104 103 102	125 124 123 121 120 119 118 117 116 115 114 113 112 111 100 109 108 108 107 106 106 105
57 56 55 54 53 52 51 50 49 48 47 46 45 44 41 40 39 38 37 36 36 37 36 36 37 37 36 37 37 38 37 37 38 38 38 38 38 38 38 38 38 38 38 38 38		80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 80 80 80 80	83 82 82 82 82 82 82 81 81 81 81 81 81 81 81 80 80 80 80 80 80	84 84 84 83 83 83 83 83 82 82 82 82 82 82 82 81 81 81 81 81 81	85 85 85 84 84 84 84 84 83 83 83 83 83 82 82 82 82 82 82 82 82 82 82 82	86 86 86 86 85 85 85 85 84 84 84 84 83 83 83 83 83 83 83 83 83	88 88 87 87 87 86 86 86 86 86 85 85 85 85 84 84 84 84 84 84 83 83 83 83	90 89 89 88 88 88 88 87 87 87 86 86 86 85 85 85 85 85 84 84	92 91 91 90 90 90 90 89 89 88 88 88 87 87 87 87 86 86 86 86 86 85 85	93 93 93 92 92 91 91 91 90 90 89 89 88 88 88 88 87 87 87 87 86 86 86	95 95 94 94 94 93 92 92 92 91 91 90 90 89 89 88 88 88 88 88 88 87	98 97 96 96 95 95 94 94 93 92 92 92 91 91 90 90 90 89 89 89 89 88 88	99 99 98 98 97 96 96 95 95 94 94 94 93 93 93 92 91 91 90 90 90 89	102 101 101 100 100 99 98 97 97 96 96 96 95 95 94 94 94 93 93 93 92 92 91 91	105 104 103 103 102 101 100 100 98 98 97 97 96 96 95 95 95 94 94 94 94 94	107 106 106 105 104 103 102 102 101 100 100 99 98 98 97 96 96 95 94 94	110 109 108 107 107 105 105 104 103 102 101 101 100 99 98 98 97 97 97 96 96 96 96 95	113 1112 1111 110 109 108 107 106 105 104 103 103 102 101 101 100 99 99 98 98 98 97 97	115 114 114 113 112 111 110 109 109 108 107 106 106 105 104 104 103 102 102 101 100 100 99 99 98	118 117 116 116 115 1114 113 112 1110 109 109 108 107 106 106 105 104 104 103 102 102 101 101 100 99	122 120 119 118 117 116 115 115 114 113 112 111 110 109 108 107 106 106 106 105 104 103 102 102 102	125 124 123 121 120 119 118 117 116 115 114 114 113 111 110 109 108 107 106 106 105 104 104
57 56 555 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 33 32 39 29		80 80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 79 79 79 79	83 82 82 82 82 82 82 81 81 81 81 81 81 81 81 80 80 80 80 80 80 80	84 84 83 83 83 83 83 83 82 82 82 82 82 82 82 81 81 81 81 81 81 81 81 81 81 81 81 81	85 85 85 84 84 84 84 83 83 83 83 83 82 82 82 82 82 82 82 82 82 82 82 82 82	86 86 86 86 85 85 85 85 84 84 84 84 83 83 83 83 83 83 83 83 83 83 83 83 83	88 88 87 87 87 86 86 86 86 85 85 85 85 85 84 84 84 84 84 83 83 83 83 83	90 89 89 89 88 88 88 87 87 87 87 86 86 86 86 85 85 85 85 85 85 84 84 84	92 91 91 90 90 90 89 89 88 88 88 88 87 87 87 87 86 86 86 86 86 85 85 85	93 93 93 92 92 91 91 90 90 90 89 89 88 88 88 88 87 87 87 87 87 86 86 86 86 86	95 95 94 94 93 93 92 92 91 91 91 90 90 89 89 88 88 88 88 88 87 87 87	98 97 96 96 95 95 94 94 93 92 92 91 91 90 90 90 89 89 89 89 88 88 88	99 99 98 98 97 97 96 96 95 95 94 94 93 93 93 93 92 92 92 92 91 91 90 90 89 89	102 101 101 100 100 99 98 97 97 96 96 96 95 94 94 93 93 92 92 92 91 91 91 90	105 104 103 102 101 100 100 99 98 98 98 97 97 97 96 96 95 95 95 94 94 93 93 93 93 93 92 92	107 106 106 105 104 103 102 102 101 100 100 99 99 98 98 97 97 96 96 95 94 94 94 93 93	110 109 108 107 107 106 105 104 103 103 102 101 101 100 99 98 98 97 97 96 96 96 95 94	113 112 111 110 109 108 108 107 106 105 105 104 103 103 102 101 100 100 99 99 98 98 97 97 96 96 96	115 114 114 113 112 111 110 109 109 108 107 106 106 105 104 104 104 102 101 100 100 99 98 98 97	118 117 116 116 115 114 113 111 110 109 109 108 107 106 106 106 106 106 100 100 100 100 100	122 120 119 118 117 116 115 114 113 112 111 110 109 108 107 106 105 104 104 104 103 102 102 101 101	125 124 123 121 120 119 118 117 116 115 114 113 112 111 110 109 108 107 106 106 105 104 104 102 102
57 56 555 54 53 52 51 50 49 48 47 46 45 44 41 40 39 38 37 36 35 34 33 32 31 30 29 28		80 80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79 79 79 79 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 79 79 79 79	83 82 82 82 82 82 82 81 81 81 81 81 81 81 80 80 80 80 80 80 80	84 84 83 83 83 83 83 82 82 82 82 82 82 82 81 81 81 81 81 81 81 81 81 81 80 80	85 85 85 84 84 84 84 84 83 83 83 83 83 82 82 82 82 82 82 82 82 82 81 81 81	86 86 86 86 85 85 85 85 85 84 84 84 84 83 83 83 83 83 83 83 83 83 83 83 83 83	88 88 87 87 87 87 86 86 86 86 86 85 85 85 85 84 84 84 84 84 83 83 83 83 83 83	90 89 89 88 88 88 88 87 87 87 86 86 86 85 85 85 85 85 84 84 84 84	92 91 91 90 90 90 89 89 88 88 88 88 87 87 87 87 86 86 86 86 86 85 85 85 85	93 93 93 93 92 92 91 91 90 90 89 89 88 88 88 88 87 87 87 87 86 86 86 86 86 86 86	95 95 94 94 94 93 92 92 92 92 91 91 90 90 89 89 88 88 88 88 87 87 87 86	98 97 96 96 95 95 94 94 93 92 92 91 91 90 90 90 90 89 89 89 88 88 88 88 88	99 99 98 98 97 96 96 95 95 94 94 94 94 93 93 93 92 91 91 90 90 90 90 89 89 89	102 101 101 100 100 99 98 97 97 96 96 96 95 95 93 93 93 93 92 92 92 91 91 90 90	105 104 103 103 102 101 100 100 99 98 98 97 97 96 96 95 95 95 94 93 93 93 93 93 92 92 92	107 106 106 105 104 103 102 102 100 100 99 98 98 97 96 96 95 94 94 94 93 93 93	110 109 108 107 107 105 105 105 104 103 102 101 100 100 99 98 98 97 96 96 96 96 95 95 94	113 112 111 110 109 108 107 106 105 105 104 103 102 101 101 100 100 99 98 98 97 96 96 95 95	115 114 114 113 112 111 110 109 109 108 107 106 106 105 104 104 103 102 101 100 99 99 98 98 97 97	118 117 116 116 115 1113 112 111 110 109 109 108 107 106 106 105 107 104 104 103 102 101 101 100 99 99 98	122 120 119 118 117 115 115 115 114 113 112 111 110 109 108 107 106 106 106 105 104 104 104 103 102 101 101 100 100 100	125 124 123 121 120 119 118 117 116 115 114 114 113 111 110 109 108 108 107 106 106 105 104 103 102 102
57 56 56 54 53 52 51 51 50 49 48 47 46 45 44 41 40 9 38 37 36 36 37 36 36 37 36 37 37 36 37 37 38 38 37 38 38 38 38 38 38 38 38 38 38 38 38 38		80 80 80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79 79 79 79 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 79 79 79 79 79	83 82 82 82 82 82 82 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80	84 84 84 83 83 83 83 83 82 82 82 82 82 82 82 81 81 81 81 81 81 81 81 81 81 81 81 81	85 85 85 84 84 84 84 84 83 83 83 83 83 82 82 82 82 82 82 82 82 82 82 82 82 82	86 86 86 86 85 85 85 85 85 84 84 84 84 83 83 83 83 83 83 82 82 82 82 82 82	88 88 87 87 87 87 86 86 86 86 86 85 85 85 85 84 84 84 84 84 84 83 83 83 83 83 83 83	90 89 89 89 88 88 88 88 87 87 87 86 86 86 85 85 85 85 85 85 84 84 84 84 84 84 88	92 91 91 90 90 90 89 89 88 88 88 87 87 87 87 87 86 86 86 86 85 85 85 85 84 84	93 93 93 92 92 91 91 91 90 90 89 89 88 88 88 88 87 87 87 86 86 86 86 86 86 86 86 86 86 86 86	95 95 94 94 94 93 92 92 92 91 91 90 90 89 89 88 88 88 88 87 87 87 87 87 86 86	98 97 96 96 95 95 94 94 93 92 92 92 92 91 91 90 90 90 89 89 89 88 88 88 88 88	99 99 98 98 97 96 96 95 95 94 94 93 93 93 92 91 91 90 90 90 89 89 89 89 89	102 101 101 100 100 99 98 97 97 96 96 96 95 95 94 94 94 93 93 93 92 92 91 91 90 90 90	105 104 103 103 102 101 100 100 98 98 97 97 96 96 95 95 95 94 94 94 94 94 94 95 95 95	107 106 106 106 105 104 103 102 100 100 100 99 98 98 98 97 97 96 96 95 94 94 94 94 94 94 94 94 94 94 94 94 94	110 109 108 107 107 105 105 104 103 102 101 100 100 99 98 98 97 97 97 96 96 96 95 94 94	113 1112 1111 110 109 108 107 106 105 104 103 103 102 101 100 100 99 98 98 97 97 96 96 95 95	115 114 114 113 112 111 110 109 109 108 107 106 106 105 104 104 103 102 101 100 100 99 99 99 98 98 97 97	118 117 116 116 115 114 113 112 111 110 109 109 108 107 106 106 105 104 104 101 109 109 99 98	122 120 119 118 117 116 115 115 111 111 110 109 108 107 106 106 105 104 104 103 102 102 101 100 100 100 100 100 100 100	125 124 123 121 120 119 118 117 116 115 114 114 113 112 111 110 109 108 108 107 106 105 104 103 102 102 101
57 56 54 53 52 51 50 49 48 47 46 45 44 41 40 39 38 37 36 33 31 31 30 29 28 27 26		80 80 80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79 79 79 79 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79	83 82 82 82 82 82 82 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 80 80	84 84 83 83 83 83 83 83 82 82 82 82 82 82 82 81 81 81 81 81 81 81 81 80 80 80	85 85 85 84 84 84 84 84 83 83 83 83 83 82 82 82 82 82 82 82 81 81 81 81	86 86 86 86 85 85 85 85 85 84 84 84 84 83 83 83 83 83 83 82 82 82 82 82 82 82	88 88 87 87 87 87 86 86 86 86 85 85 85 85 85 84 84 84 84 84 83 83 83 83 83 83 83	90 89 89 89 88 88 88 88 87 87 87 87 86 86 86 85 85 85 85 85 85 84 84 84 84 84 84 84 88 88	92 91 91 90 90 90 90 89 89 88 88 88 87 87 87 86 86 86 86 85 85 85 85 84	93 93 93 93 92 92 91 91 91 90 90 89 89 89 88 88 88 87 87 87 87 86 86 86 86 86 86 86 85 85	95 95 94 94 93 93 92 92 92 91 91 91 90 90 89 89 88 88 88 88 87 87 87 87 87 86 86	98 97 96 96 95 95 94 94 93 92 92 91 91 90 90 89 89 89 89 88 88 88 88 88 88	99 99 98 98 98 97 97 96 96 95 94 94 93 93 93 92 92 92 91 91 90 90 90 90 89 89 89 88 88	102 101 101 100 100 99 98 97 97 97 96 96 96 95 94 94 93 93 92 92 92 92 91 91 90 90 90 89	105 104 103 102 101 100 100 99 98 98 97 97 97 97 96 96 95 95 95 95 94 94 93 93 93 92 92 92 91 91	107 106 106 105 104 102 102 101 100 100 99 99 98 98 97 97 97 96 96 95 94 94 94 93 93 93 93	110 109 108 107 107 106 105 105 104 103 102 101 100 100 99 98 97 97 96 96 96 95 94 94 94 94	113 112 111 110 109 108 107 106 105 104 103 103 101 101 101 100 99 98 98 97 97 97 97 97 97 99 99 99	115 114 114 113 112 111 110 109 109 108 107 106 106 106 105 104 104 103 102 101 100 100 99 99 98 98 98 97 97 96	118 117 116 116 116 115 114 113 112 111 110 109 109 108 107 106 106 106 107 109 109 109 109 109 109 109 109 109 109	122 120 119 118 117 116 115 115 114 113 112 111 110 109 108 107 106 106 105 104 104 103 102 102 101 100 100 100 100 100 100 100	125 124 123 121 120 119 118 117 116 115 114 114 114 111 110 109 108 107 106 105 104 104 104 102 102 101 101 100
57 56 555 54 53 52 51 50 49 48 47 46 45 44 41 43 42 41 41 40 39 38 37 36 35 34 32 32 32 32 32 32 32 32 32 33 34 35 36 36 37 37 38 38 38 38 38 38 38 38 38 38		80 80 80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79 79 79 79 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79	83 82 82 82 82 82 82 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 80 80	84 84 83 83 83 83 83 82 82 82 82 82 82 82 82 81 81 81 81 81 81 81 81 81 81 81 81 81	85 85 85 84 84 84 84 83 83 83 83 83 82 82 82 82 82 82 82 82 82 82 81 81 81 81	86 86 86 86 85 85 85 85 84 84 84 84 83 83 83 83 83 83 83 83 83 83 83 83 83	88 88 87 87 87 86 86 86 86 85 85 85 85 85 85 85 85 83 83 83 83 83 83 83 83 83 83 83 83	90 89 89 89 88 88 88 87 87 87 87 86 86 86 86 85 85 85 85 85 85 85 84 84 84 84 84 84 84 83 83 83 84 84 84 84 85 86 86 86 86 86 86 86 86 86 86 86 86 86	92 91 91 90 90 90 89 89 88 88 88 87 87 87 87 86 86 86 86 85 85 85 85 85 84 84	93 93 93 92 92 91 91 90 90 90 90 89 89 88 88 88 88 87 87 87 87 86 86 86 86 86 86 86 86 85 85 85	95 95 94 94 93 93 92 92 91 91 90 90 89 89 88 88 88 88 87 87 87 87 86 86 86	98 97 96 96 95 95 94 94 93 93 92 92 91 91 90 90 90 89 89 89 88 88 88 88 88 88 87 87	99 99 98 98 97 97 96 96 95 95 94 94 93 93 93 93 92 92 91 91 90 90 89 89 89 89 88 88	102 101 101 100 100 99 98 97 97 96 96 96 95 94 94 93 93 93 92 92 92 91 91 91 90 90 90 90 90 98	105 104 103 102 101 101 100 100 99 98 98 97 97 97 96 95 95 95 95 94 94 93 93 93 93 92 92 92 91 91 91	107 106 106 106 105 104 102 102 101 100 99 98 98 97 97 96 96 96 96 99 94 94 94 93 93 93 93	110 109 108 107 107 106 105 104 103 102 101 101 100 99 98 98 98 97 97 96 96 96 95 95 94 94 94 93 93	113 112 111 110 109 108 108 107 106 105 105 104 103 102 101 101 100 100 99 99 98 98 97 97 96 95 95 95 94	115 114 114 113 112 111 110 109 109 108 107 106 106 105 104 102 101 102 101 100 100 99 98 98 97 97 97 96 96	118 117 116 116 115 114 113 112 111 110 109 109 108 107 106 106 106 106 106 107 109 109 109 109 109 109 109 109 109 109	122 120 119 118 117 116 115 114 113 112 111 110 109 108 107 106 106 105 104 104 104 102 102 101 101 100 100 99 99	125 124 123 121 120 119 118 117 116 115 114 113 112 111 110 109 108 107 106 106 106 107 104 104 103 102 101 101 100 100
57 56 55 54 53 52 51 51 50 49 48 47 46 44 44 41 40 39 38 38 37 36 35 32 31 30 22 28 27 26 25 24		80 80 80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79 79 79 79 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79	83 82 82 82 82 82 82 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 80 80	84 84 83 83 83 83 83 83 82 82 82 82 82 82 82 81 81 81 81 81 81 81 81 80 80 80	85 85 85 84 84 84 84 84 83 83 83 83 83 82 82 82 82 82 82 82 81 81 81 81	86 86 86 86 85 85 85 85 85 84 84 84 84 83 83 83 83 83 83 82 82 82 82 82 82 82	88 88 87 87 87 87 86 86 86 86 85 85 85 85 85 84 84 84 84 84 83 83 83 83 83 83 83	90 89 89 89 88 88 88 88 87 87 87 87 86 86 86 85 85 85 85 85 84 84 84 84 84 84 84 84 88 88	92 91 91 90 90 90 90 89 89 88 88 88 87 87 87 86 86 86 86 85 85 85 85 84	93 93 93 93 92 92 91 91 91 90 90 89 89 89 88 88 88 87 87 87 87 86 86 86 86 86 86 86 85 85	95 95 94 94 93 93 92 92 92 91 91 91 90 90 89 89 88 88 88 88 87 87 87 87 87 86 86	98 97 96 96 95 95 94 94 93 92 92 91 91 90 90 89 89 89 89 88 88 88 88 88 88	99 99 98 98 98 97 97 96 96 95 94 94 93 93 93 92 92 92 91 91 90 90 90 90 89 89 89 88 88	102 101 101 100 100 99 98 97 97 97 96 96 96 95 94 94 93 93 92 92 92 92 91 91 90 90 90 89	105 104 103 102 101 100 100 99 98 98 97 97 97 97 96 96 95 95 95 95 94 94 93 93 93 92 92 92 91 91	107 106 106 105 104 102 102 101 100 100 99 99 98 98 97 97 97 96 96 95 94 94 94 93 93 93 93	110 109 108 107 107 106 105 105 104 103 102 101 100 100 99 98 97 97 96 96 96 95 94 94 94 94	113 112 111 110 109 108 107 106 105 104 103 103 101 101 101 100 99 98 98 97 97 97 97 97 97 99 99 99	115 114 114 113 112 111 110 109 109 108 107 106 106 106 105 104 104 103 102 101 100 100 99 99 98 98 98 97 97 96	118 117 116 116 116 115 114 113 112 111 110 109 109 108 107 106 106 106 107 109 109 109 109 109 109 109 109 109 109	122 120 119 118 117 116 115 115 114 113 112 111 110 109 108 107 106 106 105 104 104 103 102 102 101 100 100 100 100 100 100 100	125 124 123 121 120 119 118 117 116 115 114 114 114 111 110 109 108 107 106 105 104 104 104 102 102 101 101 100
57 56 555 54 53 52 51 50 49 48 47 46 45 44 41 43 42 41 41 40 39 38 37 36 35 34 32 32 32 32 32 32 32 32 32 33 34 35 36 36 37 37 38 38 38 38 38 38 38 38 38 38		80 80 80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79 79 79 79 79 79 79 79	81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79	83 82 82 82 82 82 82 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 80 80	84 84 83 83 83 83 83 82 82 82 82 82 82 82 82 81 81 81 81 81 81 81 81 81 81 81 81 81	85 85 85 84 84 84 84 83 83 83 83 83 82 82 82 82 82 82 82 82 82 82 81 81 81 81	86 86 86 86 85 85 85 85 84 84 84 84 83 83 83 83 83 83 83 83 83 83 83 83 83	88 88 87 87 87 86 86 86 86 85 85 85 85 85 85 85 85 83 83 83 83 83 83 83 83 83 83 83 83	90 89 89 89 88 88 88 87 87 87 87 86 86 86 86 85 85 85 85 85 85 85 84 84 84 84 84 84 84 83 83 83 84 84 84 84 84 85 86 86 86 86 86 86 86 86 86 86 86 86 86	92 91 91 90 90 90 89 89 88 88 88 87 87 87 87 86 86 86 86 85 85 85 85 85 84 84	93 93 93 92 92 91 91 90 90 90 90 89 89 88 88 88 88 87 87 87 87 86 86 86 86 86 86 86 86 85 85 85	95 95 94 94 93 93 92 92 91 91 90 90 89 89 88 88 88 88 87 87 87 87 86 86 86	98 97 96 96 95 95 94 94 93 93 92 92 91 91 90 90 90 89 89 89 88 88 88 88 88 88 87 87	99 99 98 98 97 97 96 96 95 95 94 94 93 93 93 93 92 92 91 91 90 90 89 89 89 89 88 88	102 101 101 100 100 99 98 97 97 96 96 96 95 94 94 93 93 93 92 92 92 91 91 91 90 90 90 90 90 98	105 104 103 102 101 101 100 100 99 98 98 97 97 97 96 95 95 95 95 94 94 93 93 93 93 92 92 92 91 91 91	107 106 106 106 105 104 102 102 101 100 99 98 98 97 97 96 96 96 96 99 94 94 94 93 93 93 93	110 109 108 107 107 106 105 104 103 102 101 101 100 99 98 98 98 97 97 96 96 96 95 95 94 94 94 93 93	113 112 111 110 109 108 108 107 106 105 105 104 103 102 101 101 100 100 99 99 98 98 97 97 96 95 95 95 94	115 114 114 113 112 111 110 109 109 108 107 106 106 105 104 102 101 102 101 100 100 99 98 98 97 97 97 96 96	118 117 116 116 115 114 113 112 111 110 109 109 108 107 106 106 106 106 106 107 109 109 109 109 109 109 109 109 109 109	122 120 119 118 117 116 115 114 113 112 111 110 109 108 107 106 106 105 104 104 104 102 102 101 101 100 100 99 99	125 124 123 121 120 119 118 117 116 115 114 113 112 111 110 109 108 107 106 106 106 104 104 103 102 101 101 100 100
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Relative Humidity at Site

Heat Index FAQ

Note: By its very nature, a "model" policy is intended to be flexible so that when it is being considered for local adoption, local authorities can factor in the details of their unique facilities and schedules as they prescribe the manner in which this heat and humidity management policy is implemented.

Remember that even with rigorous implementation of this policy, the need remains for supervising staff to provide for adequate hydration and rest breaks at all times and places, and to arrange for cooling devices and strategies that respond to heat illness emergencies.

1. Where do I find a device that automatically provides the heat index?

A Most health care professionals with whom schools work know about these devices, called digital psychrometers, and know where to obtain them. Many medical supply stores carry the devices. Even Home Depot does.

If you Google "Devices for measuring heat and humidity," you will find many options.

The MHSAA has established a relationship with School Health. Place orders by phone, 866-323-5465, or by fax, 800-235-1305, or by email, orders@schoolhealth.com, or via Web, sportshealth.com. School Health accepts credit card or PO payments or can invoice schools. Discount pricing will be received by referring to the reference code for the particular item, MK90727 (Heat Watch) or MK61253.

2. If I don't have a digital psychrometer that provides the heat index calculation, how do I get readings for temperature and relative humidity, and how do I calculate the heat index?

A A thermometer and humidity gauge will usually be necessary. Get each reading and then refer to the "Heat Index Calculation and Chart" to determine the heat index.

3. Are there cell phone applications that can be utilized?

A There are cell phone applications that can do the calculations. There are also applications that can provide the heat index at certain locations, but those locations are unlikely to be close enough to the actual site of the practice or event to be useful.

Readings will differ indoors and out, on hills or in valleys, on natural grass or artificial turf. These and other variables make it necessary for the person designated to record and file the readings to actually take those readings 30 minutes before and 60 minutes into the activity.

4. Where in the school should the readings be filed?

A They should be placed on a regular and frequent basis in files maintained in the office of the superintendent, principal or athletic director. Those files may be electronic. Coaches might record the readings on their written practice plans which schools should then keep on file.

5. Are there any MHSAA sports or any venues for which the policy is inapplicable?

A Every practice and competition in every sport at every venue is intended to be subject to the policy when the temperature at the venue nears 80°F.

In the case of swimming & diving, the risk is greater to spectators than participants, who compete in water that may be cooler than the air temperature. While most attention will be given to outdoor sports, do not neglect conditions at indoor venues, such as volleyball in facilities that are not air conditioned.

While most attention will be given to early fall and late spring activities, do not neglect conditions for winter sports, such as in the wrestling room.

Sometimes conditions will vary for different aspects of the same competition. For example, one tennis court may be in the shade, and another out of the wind. One part of a cross country course may be much hotter or more humid than other parts. The best course of action is to take the heat index at the place of the most severe conditions.

6. Who and what control when there are multiple devices and different heat index readings at a venue?

A Host management makes the decisions to suspend and to resume activity using those devices or systems usually relied upon at that venue.

7. After a heat index reading that would require delay or suspension of activities, is there a period of time that must pass before activities resume?

A No. Readings can be taken continuously during the delay or suspension of activities. When relief from high temperature and humidity is unlikely, local authorities should be implementing previously-considered contingency plans to relocate events to different venues or reschedule events to different days or times.

8. May a school decide to implement this model policy for practices but not regular season contests?

A Yes. However, MHSAA tournament managers will follow this policy for MHSAA tournament contests.

9. When the temperature at the site of the activity is less than 80°, do we need to check and record the heat and humidity?

A No. When the temperature is less than 80°, there is no combination of heat and humidity that will result in a need to curtail activity.

However, if the temperature is near 80°, it would be prudent to record that temperature in the usual way and to have a digital psychrometer programmed to alert you to increasing temperature or a heat index that prescribes precautions.

10. The Model Policy calls for a heat index reading 30 minutes before and 60 minutes into an activity. How frequently thereafter should the heat index be checked for half-day or day-long events?

A A reasonable expectation is to continue to check every 60 minutes while the temperature is 80°F or higher.

MHSAA Protocol for Implementation of National Federation Sports Playing Rules for Concussions

"Any athlete who exhibits signs, symptoms, or behaviors consistent with a concussion (such as loss of consciousness, headache, dizziness, confusion, or balance problems) shall be immediately removed from the contest and shall not return to play until cleared by an appropriate health care professional."

The language above, which appears in all National Federation sports rule books, reflects a strengthening of rules regarding the safety of athletes suspected of having a concussion. This language reflects an increasing focus on safety and acknowledges that the vast majority of concussions do not involve a loss of consciousness.

This protocol is intended to provide the mechanics to follow during the course of contests and practices when an athlete sustains an apparent concussion.

- 1. The officials will have no role in determining concussion other than the obvious one where a player is either unconscious or apparently unconscious. Officials will merely point out to a coach that a player is apparently injured and advise that the player should be examined by a health care professional for an exact determination of the extent of injury.
- 2. If it is confirmed by the school's designated health care professional that the student did not sustain a concussion, the head coach may so advise the officials during an appropriate stoppage of play and the athlete may reenter competition pursuant to the contest rules.
- 3. If a student is removed during practice by a coach or other staff member, he or she shall not return to practice that day unless it is confirmed by the designated health care professional that the student did not sustain a concussion.
- 4. Otherwise, if competition continues while the athlete is withheld for an apparent concussion, that athlete may not be returned to competition that day but is subject to the return to play protocol.
 - a. The clearance may not be on the same date on which the athlete was removed from play.
 - b. Only an M.D., D.O., Physician's Assistant or Nurse Practitioner may clear the individual to return to activity.
 - c. The clearance must be in writing and must be unconditional. It is not sufficient that the M.D., D.O., Physician's Assistant or Nurse Practitioner has approved the student to begin a return-to-play progression. The medical examiner must approve the student's return to unrestricted activity.
 - d. Individual school, districts and leagues may have more stringent requirements and protocols including but not limited to mandatory periods of inactivity, screening and post-concussion testing prior or after to the written clearance for return to activity.
- 5. Following the contest, an Officials Report shall be filed with a removed player's school and the MHSAA **if the situation was brought to the officials' attention.**
- 6. ONLINE REPORTING: Member schools are required to complete and submit an online report designated by the MHSAA to record and track head injury events when they occur in all levels of all sports during the season in practices and competitions. Schools with no concussions for a season (fall, winter and spring) are required to report this at the conclusion of that season.
- 7. <u>POST-CONCUSSION CONSENT FORM</u>: Prior to returning to physical activity (practice or competition) the student and parent (if a minor student) must complete the Post-Concussion Consent Form which accompanies the written unconditional clearance of an M.D., D.O., P.A or N.P. This form should be kept on file at the school for seven years after the student's graduation and emailed to concussion@mhsaa.com.
- 8. In cases where an assigned MHSAA tournament physician (MD/DO/PA/NP) is present, his or her decision to not allow an athlete to return to activity may not be overruled.

NON-COMPLIANCE WITH CONCUSSION MANAGEMENT POLICY

Following are the consequences for not complying with National Federation and MHSAA rules when players are removed from play because of a concussion:

- A concussed student is ineligible to return to any athletic meet or contest on the same day the concussion is sustained.
- A concussed student is ineligible to enter a meet or contest on a *subsequent day* without the written authorization of an M.D., D.O., Physician's Assistant or Nurse Practitioner and the MHSAA-designated "Post-Concussion Return to Activity Consent Form" also signed by the student and parent.

These students are considered ineligible players and any meet or contest which they enter is forfeited.

In addition, that program is placed on probation through that sport season of the following school year.

For a second offense in that sport during the probationary period – that program is continued on probation through that sport season of the following school year and not permitted to participate in the MHSAA tournament in that sport during the original and extended probationary period. A school which fails to submit required online concussion reports will be subject to the penalties of Regulation V, Section 4 A. This includes reporting zero if no concussions occurred in a season.

MHSAA Return to Activity Form



RETURN TO ACTIVITY & POST-CONCUSSION CONSENT FORM

This form is to be used after an athlete is removed from and not returned to activity after exhibiting concussion symptoms. MHSAA rules require 1) Unconditional written authorization from a physician (MD/DO/Physician's Assistant/Nurse Practitioner), and 2) Consent from the student and parent/guardian. Both Sections 1 & 2 of this form must be completed prior to a return to activity. This form must be kept on file at the school and emailed to Concussion@MHSAA.com or faxed to 517-332-4071.

Student: S	chool:						
Event/Sport:	Date of Injury:						
1. Action of M.D., D.O., Physician's Assistant or Nurse Practitioner							
The clearance must be in writing and must be unconditional. It is NOT sufficient that the M.D., D.O., Physician's Assistant or Nurse Practitioner has approved the student to begin a return-to-activity progression, nor is it sufficient that the student is authorized to return pending the completion of a return-to-activity progression. The medical examiner must approve the student's return to unrestricted activity.	 A school or health care facility may use a locally created form for this portion of the return-to-activity protocol, provided it complies 						
Permission is granted for the athlete to to practice or competition on the same da	return to unrestricted activity (may not return y as the injury).						
	DATE:						
SIGNATURE (must be MD or DO or PA or NP – circle of	•						
Examiner's Name (Printed):							
2. Post-Concussion Consent from Stu	dent and Parent/Guardian						
I am fully informed concerning, and knowingly and voluntarily consent to, my/my child's immediate return to participation in athletic activities; I understand, appreciate, acknowledge, and assume the risks associated with such return to activity, including but not limited to concussions, and agree to comply with all relevant protocols established by my/my child's school and/or the MHSAA; and I/my child has been evaluated by, and has received written clearance to return to activity from an M.D., D.O., Physician's Assistant or Nurse Practitioner.	 In consideration of my/my child's continued participation in MHSAA-sponsored athletics, I/we do hereby waive any and all claims, suits, losses, actions, or causes of action against the MHSAA, its members, officers, representatives, committee members, employees, agents, attorneys, insurers, volunteers, and affiliates based on any injury to me, my child, or any person, whether because of inherent risk, accident, negligence, or otherwise, during or arising in any way from my/my child's participation in an MHSAA-sponsored sport. I/we consent to the disclosure to appropriate persons, consistent with HIPAA and FERPA, of the treating medical examiner's written statement. 						
Shadontia Simontura (Bonaire di)	Deter						
Student's Signature (Required):							
*Parent/Guardian's Name:*Pa	arent/Guardian's Signature:						
*Required if student is less than 18 years of age.							

Member School Concussion Reporting

Post-Concussion Return-to-Play Requirement: In addition to the written clearance from an MD, DO, PA or NP, signatures are also required of both students and their parents/guardians before the student can return to activity. It is also required that the Return to Activity & Post-Concussion Consent Form be emailed or faxed to the MHSAA and kept on file at the school for seven years following a student's high school graduation. The same form signed by the medical professional must then be signed by the student and parent before the student may return to activity. Students who participate without the required approvals are ineligible athletes.

The form is on the MHSAA website – Health and Safety – Return to Activity & Post-Concussion Consent Form. The reverse side of the form has information for parents on the MHSAA Concussion Care Gap Insurance that covers deductibles, copays and students with no insurance. The form also can be scanned at right.

SAMPLE -- MHSAA MEMBER SCHOOL CONCUSSION REPORTING -- SAMPLE

PRIMARY INFORMATION

- School and Reporting Individual & Title (AD, Coach, Athletic Trainer, Secretary, Other):
- · Email and Primary Phone

STUDENT INFORMATION

- Grade, Gender, Age, Sport
- Level (Varisty, JV, Fr., Etc)
- Date and Time of Occurrence
- Event Occurrence: Practice or Contest

DETAILED INCIDENT INFORMATION

- · Prior to this incident had the student ever been diagnosed with a concussion? Month/Year
- Was protective equipment worn on the head at the time of the event?
- Did the event result from (select one): person to person contact; person to object contact; person to ground contact; uncertain as to the cause of the event
- · If during a practice (select one): During a drill; During simulated competition- scrimmage; Other
- If during a practice (select one): The event occurred near the start of practice; The event occurred near the middle of practice; The event occurred near the end of practice
- If during a contest (select one): The event occurred near the early portions of the contest; The event occurred near the middle; The event occurred near the end of the contest
- On what surface did the injury occur: Wooden gym floor, rubberized gym floor, wrestling-type mat, indoor tile type floor, carpeted floor, rubber weight room floor, artificial turf, natural grass, concrete, asphalt, other
- The student was initially examined at the time of the event by (select all that apply): Coach; Athletic Trainer; Athletic Director; Sideline Emergency Personnel; Other Appropriate Health Care Professional; MD; DO; NP; PA; Other; or Student was NOT initially examined at the time of the suspected head injury as the student did not disclose or present any signs or symptoms of concussion during the event
- Was the student removed from activity at the time of the injury?
- Did the student return to activity on the same day because a concussion did not occur?

FOLLOW-UP TO INITIAL CONCUSSION EVENT REPORT

- Was the student determined to have a concussion?
- The student was given a written authorization to return to activity by a: MD; DO; NP; PA
- Date of written authorization to return to activity:
- Please select the type of medical facility from which the authorization to return to activity was provided: Hospital; Urgent or ready care business; Primary care physician or pediatrician's office; Neurologist's office; Team Doctor; Other
- Were there comments or conditions written on the authorization to return to activity?
- How many days was this student absent from school as a result of this concussion event?
- The student was NOT given a written authorization to return to activity by the end of the season in which the event occurred (Dec 1, April 1 or July 1 or later).

Following completion of the required material above, schools will be provided the opportunity to describe any additional information regarding the incident occurrence, or follow-up to the incident.

The Heart of the Matter: Potential Life-Saving Resources

From the Mayo Clinic:

Sudden cardiac arrest symptoms are immediate and drastic.

- Sudden collapse
- No pulse
- No breathing
- Loss of consciousness



Sometimes other signs and symptoms precede sudden cardiac arrest. These may include fatigue, fainting, blackouts, dizziness, chest pain, shortness of breath, weakness, palpitations or vomiting. But sudden cardiac arrest often occurs with no warning.

This page offers just some of the resources available to schools to encourage preparedness for such situations.

CPR Requirement FAQs

- Q Which coaches are required to have CPR certification?
- Head coaches at all levels of high school and junior high/middle schools must have a valid current Cardiopulmonary Resuscitation certification by the established deadline for completion of the rules meeting, for the first sport in which the coach is a head coach during the school year.
- How expensive is the certification?
- \$0 to \$95.
- How long does certification take?
- Two to five hours.
- How long does the certification last?
- Generally, two years

- Does the MHSAA specify the age level for the CPR training?
- No. Generally, the course for adults alerts candidates of the necessary modifications for children and infants, and vice versa.
- Does an online course satisfy the requirement?
- A Yes. While not as effective as face-to-face courses, an online course does satisfy the requirement.
- Is it necessary for varsity, junior varsity and 9th grade head coaches to also have training in AED?
- A AED training is often a part of CPR certification and is preferred.

Become a MI HEARTSafe School

school community suffers a sudden cardiac arrest, would you know what to do? Did you know that early recognition of a cardiac arrest, calling 9-1-1, bystander response with hands-only CPR, and use of



an AED greatly increase the chance of survival?

Important questions for schools to consider are:

- Does your school have a cardiac emergency response plan?
- How many students and staff can recognize the symptoms of cardiac arrest and know how to get help "on the way, right away"?
- Who knows CPR in your school and is ready to use it when necessary?
- Where are the automated external defibrillators (AEDs) located in your school building, are they properly maintained and inspected, and who knows how to use them?

The MI HEARTSafe Schools Award Program was developed to help schools be prepared for a cardiac emergency. Schools meeting the minimum criteria will be awarded the MI HEARTSafe School designation, receive a letter of commendation, and be spotlighted on our website, all at no cost to the school.

More than 330 schools and/or districts in Michigan have HEARTSafe status. The program provides valuable resources and training, and the price is right: free! The MHSAA encourages schools to join the list.

To apply for MI HEARTSafe School designation at no cost, download and follow the instructions on the application form at https://migrc.org/Library/HEARTSafe.html

CPR Requirement: Who Can Help?

The MHSAA does not dictate which organization or individual must provide CPR education and certification. However, the Michigan Department of Health and Human Services lists the following organizations that are approved to provide CPR training:

American CPR Training American Heart Association American Red Cross American Safety and Health Inst. American Trauma Event Management American Health and Safety Emergency Care and Safety Institute Emergency First Response Corp. EMS Safety Services, Inc. Pro Trainings LLC

americancpr.com heart.org redcross.org hsi.com atem.us

asha_safety@sbcglobal.net ecsinstitute.org emergencyfirstresponse.com smssafetyservices.com profirstaid.com

NFHS Course on Sudden Cardiac Arrest (SCA)

The NFHS online course on sudden cardiac arrest is free and available by scanning the code at right.

This topic will again receive attention in the risk management portion of the required head coaches rules meetings this year.

The NFHS is also offerse many other health and safety courses linked from MHSAA.com and NFHSLearn.com.



MHSAA Sports Medicine Advisory Committee Guidance Emergency Action Plan (EAP)

Regulation II, Section 3 (D) – **Emergency Action Plans Requirement:** High schools must attest by each season's established deadline that their high school sports coaches have emergency action plans (EAP) in place specific to sport and location – which are posted, dispersed, rehearsed, discussed, and documented within individual practice plans.

BENEFITS OF HAVING AN EMERGENCY ACTION PLAN:

- · Provides a risk management strategy.
- Readily prepared for emergency situations.
- Ensures appropriate care is provided in a timely manner.
- Decreases the chance of legal action taking place.
- Protects liability of coach, school staff/administration, and medical providers.
- Leads to a more effective emergency response.
- Reducing further (or secondary) injury.

WHAT DOES AN EMERGENCY ACTION PLAN (EAP) DO?

- The EAP provides information to ensure a response to an emergency is rapid, appropriate, and controlled. All personnel involved with the organization of athletic activities share a responsibility to ensure that guidelines are in place to manage any emergency that could arise. While being comprehensive, an EAP should also be flexible enough to be applicable to any emergency situation.
- A documented, venue-specific athletic emergency action plan is the most effective way for schools to prepare for and respond to emergencies. It is important to formulate and implement a proactive, comprehensive venue-specific emergency action plan for each school venue which includes:
- 1. Emergency personnel Describe the emergency team involved when the EAP is activated and the roles of each person.
- **2. Emergency communication**—Determine which communication devices are available, where, what number to call in an emergency, and specific information and directions to the venue to provide to the EMS response team.
- **3. Emergency equipment** Determine where equipment is and how it can be accessed quickly. Access considerations should be made for weekends, evenings, and when administrative or healthcare personnel are not on site. Equipment needs to be maintained per manufacturer guidelines.
- **4.** Emergency transportation Describe options and estimated response times for emergency transportation. Emergency responses via 911 are best provided by EMS services directly. Appropriate transportation options may be discussed in advance, as well as what initial care may need to be provided at the venue prior to the arrival of EMS services.
- 5. Venue directions with a map—These directions should be specific to the venue and provide instructions for easy access. Parking should be monitored for blocked access.
- 6. Roles of first responders Activate the EAP by actively or designating the following responsibilities
 - Activation of EMS
 - · Establish scene safety
 - Crowd/parental control
 - Team control/emotional care
 - · Immediate care of the athlete
 - Equipment retrieval
 - Actively directing of EMS to the scene
 - If the institution maintains emergency transfer of care/insurance forms, they should be organized, accessible, and transparent to EMS in a timely fashion
 - First Responders should be mindful to properly care for, inform, and lead visiting teams when an EAP is activated
 - Present school employees and coaching staff should expect to be active participants in the EAP

- continued

- 7. Action plans for non-medical emergencies These emergencies can refer to the school emergency action plan for lightning, fire, severe weather, school safety, etc. In the event that teams need to be removed from the venue, a safe, predetermined location needs to be available. First Responders should be mindful to properly inform and lead visiting teams when an EAP is activated.
- **8. Distribution of the EAP** The EAP should be distributed to all athletic staff members and healthcare professionals who will or may provide medical care during practices, games, and/or other events on-site.
- 9. After-action report This should be completed after an EAP rehearsal and/or following any actual emergency event.
- **10. Yearly rehearsal** At a minimum, a yearly rehearsal should be held, and it should include pertinent school staff and onsite medical providers. Documentation of this rehearsal and those in attendance should be maintained.
- 11. Appraisal A year-end appraisal/review/evaluation should include an objective review of EAPs and all pertinent school staff involved. Local EMS should be included as necessary and as available. Documentation of this appraisal should be maintained and distributed to all stakeholders.

Statement of Air Quality and Sport Participation Policy

Recent fires and smoke from outside our state continue to raise questions regarding safe participation in sports and practice for young athletes. This position statement serves as a resource to coaches, administrators, parents, and students who have questions about participation in outdoor activity during periods of diminished air quality for MHSAA member schools.

A valid and reliable standardized national air quality resource is the National Weather Service (NWS) Air Quality Forecast System. This system provides constant monitoring of ozone, particulate matter, and pollutants with accurate and advanced notice to prevent the adverse effects of decreased air quality. The key component of the standardized air quality resource is the NWS Air Quality Index (AQI). The AQI is reported as a single number based on a scale of 0 to 500 with 0 being completely safe and 500 indicating the most hazardous levels of air pollution.

The MHSAA offers the following guidance to institutions seeking to make decisions about the appropriateness of practice or competition in questionable air quality situations. MHSAA recommends following these guidelines. If specific guidelines have not yet been provided, the following are useful guidelines consistent with NCAA and NFHS position statements on air quality.

- 1. Monitoring of local AQI and associated air quality alerts, especially during times of extreme environmental conditions is recommended. Advice and monitoring is best done by the primary athletics health care providers (athletic trainers, school nursing staff, team physicians) who have training in such monitoring. Schools may choose to delegate this responsibility to a staff member with knowledge of AQI.
- 2. At AQI values **above 150**, local host consideration should be given to shortening, delaying, modifying, rescheduling the activity or moving it indoors if possible. Prolonged exposure and heavy exertion should be reduced, shortened or even avoided.
- 3. At AQU values above 200, outside events should be rescheduled, postponed or cancelled.

School Emergency Action Plans may guide the emergency care response in these circumstances and the staff should be made aware of this plan. The Preparticipation Physical Examination for Sport will be used as a tool to identify students at risk for smoke inhalation exposure such as asthma, cardiac disease, and respiratory disease. Emphasize to student-athletes that the wearing of masks, such as for protection against COVID-19, does not protect against exposure to hazardous air quality. Consequently, wearing masks will not allow competition or practices when AQI is at hazardous levels.

There are now validated online applications to smartphones which can track not only AQI in a town or city, but also AQI regionally near each neighborhood within each town or city. The MHSAA recommends using the **www.airnow.gov** application for this purpose. The AQI may even be checked periodically during a day of competition or practice in case of changing conditions. The application was created with the collaboration of the Environmental Protection Agency and contains not only air quality data but also current fire conditions, webcams, and email notifications consistent with local and regional up-to-date conditions.

References

- 1. Air Quality Position Statement. NCAA Sports Science Institute, Sept 2018
- 2. NFHS Position Statement on Physical Activity, Air Quality, and Wildfires, April 2019
- 3. US Environmental Protection Agency. Air Now website www.airnow.gov